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ABSTRACT

The nine papers in this document represent the final report of a workshop on research on literacy in developing countries. It is noted in the introduction by Kenneth King that research in literacy tends to be performed by persons who are also literacy activists and that the problem of motivation seems to be central to most literacy research. It is suggested that adult literacy research must be connected with research on the quality and effectiveness of elementary and secondary education. The papers included are: "Development Policy Outcomes of Adult Literacy Research"; "Literacy without Schooling: Testing for Intellectual Effects"; "Primary School Leaving Examinations, Basic Intellectual Skills, and Equity: Some Evidence from Kenya"; "International Study of the Retention of Literacy and Numeracy: the Egypt Case Study"; "Research on Innovative Nonformal Education for Rural Adults: Implications for Literacy Motivation"; "New Research Approaches to Literacy Development in Tanzania"; "First Report on the National Adult Education Programme: the Scope for Evaluation"; "A Comparison of Three-Script Literacy in Liberia"; and "Literacy Research: Some Observations on its Nature and Conduct." (HKM)

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BONN/FEDERAL REPUBLIC OF GERMANY

LITERACY RESEARCH IN DEVELOPING COUNTRIES

FINAL REPORT

Bellagio IV Workshop on Educational Research with Special Reference to Research on Literacy

November 19 to 22, 1978
Geneva/Switzerland

CS005132

Edited by Kenneth King

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Introduction to the Bellagio Papers on Literacy Research

There is a major difference in the clienteles studied by researchers concerned with schools and researchers concerned with illiterate adults. School children are expected to be a growing or relatively constant number; illiterate adults are meant to dwindle away and ideally cease to exist. Schooling therefore tends to be a routine activity, while illiteracy action is frequently seen as a campaign. UPE (Universal Primary Education) is often also presented as a campaign, but one which dramatically increases the student population; UAE (Universal Adult Education), if successful, would eliminate the object of study and put the literacy researcher out of business. Although there is little likelihood in the short term of this happening (indeed the stark statistics of adult illiterates continue to rise), there is nevertheless a 'campaign mentality' which attaches to literacy work, separating it from other forms and levels of education.

The research tradition in literacy is inevitably affected by the nature of the literacy enterprise. One of its most noticeable characteristics is the very close connection between literacy action and literacy analysis. To a much greater extent than research on other aspects of education, the thinkers on literacy have been and continue to be activists. Paulo Freire is only the most notable and recent in a tradition of literacy apostles, and his own continuing reflections on literacy are constantly affected by his ongoing work in Sao Tome and Guinee Bissau.* Moving back and forward between the field and the office is really much more typical of the literacy analyst than of the researcher on higher education, or the analyst of education in its relation to the labour market. Putting it another way, we could say that the more traditional disciplines of education divide time between teaching and doing research. The literacy analyst frequently does not go and 'do research', but participates in some activity.

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* During the Bellagio meeting, a group of participants met with Paulo Freire. He had just published a literacy primer for Sao Tome, A Luta Continua, of which he was as proud as of any of his more scholarly writings.

For several years, many of the main funding agencies concerned with problems of education and educational research in developing countries (the "Bellagio Group") have met informally to discuss common themes, and listen to analysts from these countries. This present group of papers on literacy research (in school and in adult life) are the responsibility of their individual writers, and in no way represent the collective view of the agencies who participated in the meeting of November 1978.

Because of the nature of the clientele, the touchstone of most literacy analysis is motivation, -examining the nature of the constraints upon participation in literacy classes, the reasons for dropping out so soon, the resistance of particular groups, such as women, pastoralists, etc. The issue is not just the individual motivation, but the motivation of the government or agency concerned. Indeed the two are intimately connected, since it is the apparent lack of individual motivation for literacy that impels literacy experts to concentrate on motivation or commitment at the national level. Outside of the context of an ongoing national campaign, it is undeniable that literacy is the one level of education in the Third World where people are not clamouring for greater access or more provision. The result of this situation is that literacy studies and research are very largely concentrated on the countries that have had major campaigns and where the issue of national commitment has been guaranteed. North Vietnam, China, Tanzania, Mali, Cuba, Somalia, Iran, and now India. This naturally produces a rather unusual research situation in the sense that the analysis (whether on the role of the local languages, teaching methods, or completion rates) tends to be drawn from these situations of high national commitment.* In situations where this commitment is not present, there may still be some writing on literacy, but this will tend to derive from the enthusiasm of a particularly active individual or agency. Here the motivation of the providing agency can be seen as compensating on a very localised level for the absence of a more general commitment to literacy.

This theme of motivation, then, accounts for and runs through much of the writing on literacy. It is central to what was certainly the largest single co-ordinated piece of research on literacy: the UNESCO/UNDP Experimental World Literacy Programme. This 'controlled' experiment took place in a number of countries which were already somewhat committed to literacy (e.g., Mali, Tanzania, Algeria), and sought to overcome the problem of motivation by linking the literacy to a particular measurable improvement in some skill (whether fishing, growing coffee or whatever). By teaching reading and writing through the medium of a skill that could have a financial payoff, it was hoped to break through adults' apparent unconcern with the advantages of 'mere' reading and writing.

Equally, motivation is at the heart of the Freirian approach to literacy. The culture of silence and of exploitation in which so many adult illiterates live has to be recognised for what it is. Again not literacy for its own sake, but as a new set of symbols for

* See for example, International Council for Adult Education, The World of Literacy: Policy, Research and Action, IDRC, Ottawa, published July 1979).

classifying and defining the political situation. One does not learn the verb 'to be' in Freire's grammar book for Sao Tome, without learning about politics in that country:

> I am a militant of the party and a revolutionary vanguard.
>
> You are my comrade.
>
> He is the minister and my comrade was well.

A third variant on motivation for literacy frankly abandons the view that literacy is a necessary accompaniment or precondition of development, and proposes the improvement of income opportunities in the village or town as the first priority. This development-before-literacy approach judges that the work environment and opportunities need to be altered before there is a use or demand for literacy, and sees no reason to believe that literacy tools are a particularly effective way of initiating that change.

In view of literacy work's very close links with motivation, it should not be surprising that literacy workers necessarily share many characteristics of community development workers. Their clienteles, whether slum dwellers, low income workers or the self-employed rural poor, seem to lack the weapons to alter the structures in which they live. Their methodologies consequently employ a variety of ways of heightening the sense of participation, and giving the clients a feeling of being in control of their own education and development. This concern with making the recipient an active participant in the development process has logically spilled over into the literacy research process itself. Decisions about what a village, a community or a marginal urban grouping actually needs are now frequently sought in a nondirective way. Those outsiders acting as sponsors of the development do not come and identify what they think are appropriate objectives for the village, but increasingly get involved in a series of meetings with the villagers in an attempt to have them name their own priorities. This collaborative gathering of information between catalyst and villager on development can in some sense be called research, -participatory research to distinguish it from research where the investigator keeps all his tools to himself.

Although it is important not to exaggerate the current influence of this particular way of approaching the literacy task, it is worth noting the existence of the Participatory Research Project, which is coordinated out of the International Council for Adult Education, and

which clearly shares a common set of assumptions to those of the paper by Kassam and Masisi in this present volume. It is also apparent from the companion piece by Catherine Crone that a whole methodology has been developed around this approach, as can be seen from the following excerpt:

> In carrying out the initial needs' assessment in each village, a team composed of facilitator and village co-ordinator finds a common meeting place and engages the villagers in a variety of informal, information-gathering activities (including having them tell stories about pictures, reacting to taped, open-ended dramas, answering projective questions).
>
> In analysing the data generated during the needs' assessment, the project staff looks for common themes in learners' interests. Based on these themes, they develop initial learning experiences and materials which will give the learners the opportunity to determine which topics are of greatest interest, and given the local resources available, which are feasible to pursue.
>
> (p. 122)

The concern with motivation, and raising the level of popular participation is important, but it is still only one aspect of the larger debate about literacy research. As so often happens with new emphases in education, it is a swing back to an older, neglected principle of 'learner-centredness', couched now in language that stresses the political structures as much as the pedagogical principles. Much of this new methodology is associated with the beginnings of the literacy process, getting learning under way in situations of apathy and indifference. What other contributions in this volume point to, however, is the complexity of many of the processes that have to be taken into consideration even after a successful initiation into the world of literacy.

Not the least of these is the whole area that might be termed the uses of literacy. Whatever strategy may be used for motivating the illiterate to learn, the mechanisms for maintaining the newly won skills are clearly as vital. A great deal more needs to be known in detail about the everyday practices of reading, writing and calculation in those environments where it is so frequently alleged that the illiterate elements of the population are missing so much of the quality of life. It may well be true that for the remaining clusters

of illiterate workers in the formal sector there is a calculable benefit from becoming literate, and this potential of literacy for employed workers is neatly captured in Kassam's voice of a new literate:

> Literacy has opened our eyes and it has done such a lot of good that I now believe that if anyone refuses to become literate he should be dismissed from his job.
>
> (p. 148)

No such ready calculation can be made by the millions of illiterate subsistence self-employed. There is no hierarchically organised job structure that might correspond to and reward the various stages of literacy achievement. Ragpicking, sharecropping, or doing outwork in the home on a piece-rate are, for example, minimally affected by the acquisition of literacy, as are many other types of work in the large unorganised sector of the economy. Nor does making literacy the vehicle for useful crop or fertiliser information or improved business practice make very much difference, if the recipient of the new knowledge cannot act upon it. And almost by definition the bulk of the illiterate in the rural areas are not those poised to adopt new pest control practices or new crop strains. They have neither the standing nor the savings to get a loan or take the necessary risk.

This is why it is so necessary to have more research such as that reported on by Scribner and Nyei, detailing what are the social situations which keep even such a difficult script as Vai going. In many thousands of villages and settlements, in fact, the written word is nowhere to be seen. No village name. No paper. No public announcement board. No shop names. Paradoxically, in many parts of Africa it is the very division and breakup of the family that produces one of the greatest levers for continuing literacy. Everywhere that one finds 'one family, two households', from the Upper Voltan migrants in Ivory Coast to the mineworkers in South Africa, to the internal migrants from country to town, the economic necessity of urban work produces letters about the farm, school fees and family business.

This essential ethnography of literacy also needs to be supplemented by literacy insights from the formal primary school. The World Bank's research on literacy thresholds in school may seem far removed from the concerns of the literacy planner, but in fact it focuses directly on the question of at what point the ordinary

primary school can be sure that it is not contributing to the growth of adult illiterates. If the school cannot hold on to its children for more than two or three years, it is feared that these early dropouts will simply turn up ten years later in the statistics of adult illiteracy.

School research of the sort reported by Somerset and Makau can also be vital for literacy planning. School quality and teacher quality are clearly factors that can make a significant difference to the various levels of intellectual skills. Higher order reasoning skills may well have a great deal more to do with school context than was first thought, and this in turn may suggest that not nearly enough work has been done on the quality of literacy teaching. Many literacy classes fail because the village or urban target groups can spot immediately that the provision is viewed as poor people's education imparted in a shabby way. It is too often an activity carried on on the very periphery of the formal sector, with classes that may be cancelled at a moment's notice, texts that may not exist, and with teachers who are not paid.

The intellectual consequences of exposure to poor teaching are only beginning to be thoroughly charted in the formal school systems, with rather remarkable differences emerging even when the socio-economic background of the children is virtually identical. How much more work remains to be done on adult literacy teaching where such questions as those raised by Makau and Somerset have scarcely begun to be asked! What, for example, are the current effects in Somalia of the seven month literacy campaign in the mid-seventies? What kind of intellectual armour can be bought in the extremely short literacy courses being planned by Ahmadu Bello University?

Insufficient attention has also been given to the fact that the literacy skills being acquired in schools are reinforced by the coherent sequence of grade and promotion, and by the possibility of access to secondary education. By contrast there is a real difficulty about continuing to offer literacy to adults as if it were a step towards rejoining the educational mainstream and through that the formal employment stream. It has become increasingly necessary to admit that the kind of minimum literacy acquired in today's campaigns will not be in any sense a passport out of rural subsistence employment.

Because of the primacy of the problem of motivation in literacy research and planning, the history of literacy has emphasised changing methodologies to combat this (each one teach one; functional

literacy; conscientisation; development-before-literacy). At the level of the international conference, there has usually been a remarkable degree of consensus on the best contemporary method. But out in the field, there may well be much less change from traditional methods than the conference reports might imply. Many of the newer methods are simply more expensive (e.g., functional literacy), and require more specialised personnel (e.g., awareness creation) than the meagre allocation to adult education departments can support.

We thus come round full circle to the position from which we started. Adult illiteracy is meant to be a residual category, something that is going out of existence. It is, therefore, almost inconceivable that it can receive from government on a regular basis the kind of budget that the need might suggest. The statistics of adult illiteracy are there, but, unlike the other social sciences where the demand is virtually insatiable (housing, health, school and university education), the adult illiterates are not a constituency to which the politicians or Education Ministry need to give their attention. So far from illiterates demanding a service, it is widely admitted, as we have seen, that planners will have to work hard even to create that demand. It is not a good bargaining position for funds amongst competing ministries for adult education to have to admit that they will have to motivate their particular clientele to want the service they are offering.

This is one good reason why it is important for research on adult literacy to concern itself with as wide a series of interconnections with school education as is possible. Instead of limiting its scope to research on adult clienteles, it would make very good sense for literacy researchers to examine the role of the formal school in the genesis and reproduction of illiteracy. Studies on early school drop-outs are an obvious target for the adult literacy researcher, since it is precisely the 50% who in some countries drop out in Grades I and II that help to produce the dimensions of illiteracy. Equally it would seem important for literacy researchers to concern themselves with the critical point of access to primary school. Here too there is a dividing of the ways with considerable implications for adult life. The implementation of universal primary education is inextricably linked to the scale of later adult literacy. By placing, therefore, in the same collection these present analyses of literacy in school and literacy in adulthood, it is hoped to reinforce these connections.

It is also by the judicious diversification of literacy research that a body of findings can be built up which focus on matters of significance to policy-makers. Of course, several areas of fundamental research appear to have no immediate relevance to policy but this is sometimes because inadequate analysis has been given to the separate roles of policy, planning and research. The very term 'policy-relevant' research implies that policymakers have a shrewd idea of the information they would like to have to implement some strategy. This is seldom the case. At the other pole, the use of the term 'irrelevant academic research' also exaggerates the remoteness of the research community. As we have already said, the Adult Literacy research community is a particularly interesting one because of the activist tradition in literacy work, and the lack of a major gap between researcher and researched. It is very appropriate, therefore, that the first of the following papers address this issue of the separate spheres of policy and of research. This sets out a useful framework which helps to accommodate the variety of research approaches that succeed it; it indicates also the range of work that lies ahead for researchers in the 1980s.

Kenneth J. King
Ottawa, Canada.
June 1979

CHAPTER I

DEVELOPMENT POLICY OUTCOMES OF ADULT LITERACY RESEARCH

by H. S. Bhola*

Policy making is the process of directing and harnessing social power to create preferred social outcomes. New policy, to be so called, should seek to bring about new distributions of power, of statuses, of economic and educational goods. Thus, if new distributions of power, status, income or education are not involved, we are not dealing with policy. We may be dealing perhaps with rules, regulations, plans or procedures.[1] Since policy making involves new distributions, it is a political process. The policy making culture includes both the power-elite (policy makers in power) and the counter-elite (policy makers out of power or dissidents) with their separate schemes of distributions or social visions.

Planning stands between policy making and program action. It is a design process, involving the articulation of means to achieve policy intentions, within a particular time frame. Planning is by no means completely immune to political pressures, but it is predominantly a rational activity.

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Policy, planning and research utilization

Policy making is political. The policy maker envisions; and visions are not reduced from research knowledge which itself is not unequivocal. The policy maker, while relating with history and objective reality, is also a maker of history; he is an artist in the art of acting on insufficient knowledge.

The relationship between planning and research knowledge can, theoretically speaking, be more direct. The planner has to cause things to happen. Therefore, planners should be interested in research that has hypothesized, tested and established causations. Not that it always happens!

According to a recent Unesco document, for successful launching and implementation of literacy program, a program must be conducted in a context of profound changes in society and/or at a juncture of economic expansion and broadening of the employment market; it should be the outcome of an expressed political will; it should be based on the support of the entire population; should be connected with the establishment of a post-literacy training scheme; and accompanied by an expansion of school enrolments.[2] As we can see, the availability of research to guide policy decisions, planning and action is not stated as a crucial requirement.

What then of research knowledge and knowledge utilization? We must, of course, understand the inherent weaknesses of research knowledge: knowledge about human cognitions and motivations, about human institutions and social patterns is not definitive; and is subject to divergent interpretations. We must understand also the nature of the process of research utilization in policy making and planning. The best we can hope for here is the creation of a healthy tension between research and policy making;[3] for research

to be used by policy makers as part of their language of justification; and by the critics of policy (the counter-elite) to question policy being propounded, and to object to the institutional arrangements being proposed for its implementation. In planning, similarly, we can only hope for a more systematic use of research.

To promote more systematic and effective research utilization in policy making and planning, the following conditions must be fulfilled:

1. Appropriate research must be available and in appropriate form;
2. This research should be systematically brought to the attention of the policy maker and the planner; and
3. Institutional mechanisms should exist to support both knowledge production and knowledge utilization.

Policy and planning questions

The issue regarding the availability of appropriate literacy research in an appropriate form can be addressed by listing the types of questions that policy makers and planners would typically ask and by reviewing what answers literacy research does provide. Considering that policy making is a process of creating new distributions of power (and of what comes with power), policy questions are, essentially, allocative questions. Planning questions, on the other hand, are design questions.

The fundamental allocative question of interest to policy makers is: Should the power and the resources of a society be directed at all to the promotion and provision of adult literacy? There are, of course, many related questions: Why should policies

for the promotion of adult literacy be pursued at all? Is literacy a social good that needs no justification? Is literacy an instrumental good necessary for achieving other higher policy goals? What consequences, desirable or undesirable, follow from adult literacy? Are there alternatives to adult literacy, under some given set of conditions, for achieving similar informational and educational goals but at lesser social and economics costs?

The second set of questions, of interest to planners in the field of adult literacy, are design questions: How to design successful adult literacy programs and projects? How to establish functional interfaces between adult literacy programs and existing programs of formal education, extension and development? How to institutionalize adult literacy programs and infrastructures of post-literacy? These questions do not, by any means, exhaust all the possible design questions. Planners in the adult literacy field need answers to specific design questions in regard to the language of literacy, choice of media and methodologies, approaches to mobilization of voluntary effort, curriculum development, training of personnel, and field organization.

The allocative questions: to be or not to be a literate society

The allocative questions are indeed questions of justification. How to justify, the allocation of national resources to the promotion and provision of adult literacy? Different groups of policy makers have used different justifications, some of them mixed justifications. To quote from a recent Unesco document:

> Literacy is at once a right of every individual, a factor making for development and a component of lifelong education. All literacy action is based on the universal right to education without which there can be no equality of

> access to the possibilities of participation in economic, social, cultural and political life, and on the fact that the objective transformations wrought by any development process cannot come about as long as one is exclusively confined to oral communication; such communication although functional in static contexts, does not allow sufficient accumulation and use of knowledge in changing societies. Lastly, literacy action is but one stage in the educational process and literacy has no purpose until it leads to further activities and the fulfillment of potential along one or other of the numerous lines connoted by the principles of lifelong education.[4]

As we can see, the preceding paragraph offers a mixture of three types of justifications for literacy promotion -- ethical, socio-economic and educational.

But how does one prove that "illiteracy is a disgrace to all mankind?" How does one prove literacy to be a fundamental human right? Does literacy really enable the new literate to benefit from mankind's cultural heritage? Does popular literacy really help in the definition of a cultural identity? Does literacy create critical consciousness among individuals and help them transform the realities that surround them? Does literacy promote participation in the social, economic and political life of the community and nation? Does it make the new literate less vulnerable to the literate elite in a world dominated by the written word? Does literacy promote acceptance of innovation and change?

It can be seen that only a few of the questions listed above can be answered by research on individual behavior or characteristics of groups and communities. Others invite theoretical analysis or ideological assertion.

The grid below can be used both to review available research and to discover the gaps in knowledge needs of the policy maker.

	Prove/Disprove or Persuade/Dissuade	
	Individual Level	Societal Level
Ideological Analysis	1	2
Theoretical Analysis	3	4
Research Findings	5	6

The categories used above may not be mutually exclusive, but are analytically useful.

The conclusion is warranted from the preceding discussion that research, as commonly understood, cannot alone help in answering the allocative questions, the questions of justification. Theoretical analysis and ethical argument will constitute an important part of the language of justification.

It is not possible within the scope of this paper to present a review of empirical research, and theoretical and philosophic analysis of use to the policy maker in deciding allocative questions and for providing justifications for policy choices.[5] We must, however, suggest that might be usefully done in the future by way of knowledge production.

At the ideological level, the help that a researcher (or maybe we should say, knowledge producer) can give to the policy maker, will have to be philosophic analysis. Does literacy make a man more human? Does it make him more independent or dependent? Is it moral to have a society wherein some are literate, and some others are not? Is it unjust not to allocate needed resources to the education of the illiterate sector of a society? Is the intended cultural integration of the so called marginal people into the mainstream a good idea? Will the new literate society be a moral society? These questions have indeed agitated the minds of knowledge producers. Some have called literacy a "human right"; some have labelled it as "gradualism";[6] while some others have suggested that literacy will lead to a "dispossession of speech." Further philosophic and analytic studies by competent people are sorely needed.

Again, theoretical analysis can help policy makers in illuminating allocative issues and in developing languages of justification. Most allocative questions involve complex choices and are often too big to be accommodated within an experimental or quasi-experimental format. Consequently, theory may quite often prove more compelling than research in the decision-making process. We are all familiar with Schultz's theory[8] of the residual and McLuhan's epistemology[9] of the print medium but much more is needed. Theoretical analyses by anthropologists, sociologists, political scientists, economists, social psychologists, communication and information theorists, and futurists are needed to be made available to the policy maker.

The researcher who produces knowledge through experimental, quasi-experimental and survey research or through historical analysis can, of course, illuminate many of the issues and concerns of the policy maker. However, research can hardly ever provide full

and final answers because research questions are often manageable questions that illuminate parcelled out reality. Studies of literacy and innovativeness and literacy and cognitions[10] need to be supplemented by systematic naturalistic study and evaluation of living projects and programs[11] for empirical research to be more useful to the policy maker.

The design questions: how to do it, if we do?

The design questions arise after a decision has been made, at some level of commitment, to teach adult literacy intensively to some selected communities or to the masses in general. Design research is the planners' and programme administrators' research, but good design research can influence policy by deepening or expanding commitments to literacy or by discounting commitments already made. The pertinent questions here relate to the mobilization of people and resources for literacy promotion; design of field organization; interfaces between formal and nonformal systems; inter-ministerial coordination mechanisms; training of teachers, monitors and local leaders; design of mechanisms for local participation; curriculum design, choice of methodologies and production of instructional materials; and other related questions. Here, again, there are big gaps in knowledge about program design. Organizational questions have been somewhat neglected and research on teachers and participant motivations, methodologies and materials has not always been synthesized for ready use by planners and policy makers.[12]

Utilization of available knowledge

What we have got by way of empirical research, theoretical discussion and philosophic analysis is not enough. But even what we have got is not being used by policy makers and planners hence it is not always appropriate or is not always available in appropriate form.

The analytical and theoretical material is often written at a level and in language that sounds both abstract and esoteric to the policy maker. Other research is seen by policy makers as related to alien contexts and of no relevance to the management of politics in particular nation states.

Planners, like policy makers, find it hard to make use of design research because they are unable to read such research or because they fail to see the practical application of such research.

Some general principles of research policy in adult literacy suggest themselves:

1. Philosophic, historical and theoretical analyses of literacy should be commissioned from competent people and sent to policy makers. Popular, easy-to-read versions of such studies should also be disseminated through popular media.
2. Design studies should be promoted that fill the gaps in existing knowledge. Available design research should be synthesized and the implications of such research for planning decisions should be brought out.
3. More and more research studies should be made -- region- or country-specific. Policy makers and planners should be able to use available material in their day-to-day decision making in the particular socio-cultural contexts of their countries.

On the basis of these general principles, detailed suggestions have been made in the table below. The table anticipates some of the suggestions to be made later on the problems of dissemination and utilization of research results.

RESEARCH FOCUS	THEMES AND RESEARCH QUESTIONS	DISSEMINATION STRATEGIES
1. Literacy Policy Research	1. Historical analyses of the diffusion of literacy in societies such as U.S.A., U.S.S.R., Cuba, Tanzania, Burma, India, etc., with lessons for developing societies.	1. Involve III World universities and teacher training institutions in research.
	2. Languages of justification or disapproval for the diffusion of literacy in societies involving philosophic, political, social, economic and communication analyses. (Most of these analyses would be general, but some could be specific to regions and countries).	2. Involve III World government planners and policy makers in developing policy analyses and future scenarios in close collaboration with interested university researchers in the North and the South.

		3. Policy analyses of the role of literacy in different countries and regions with discussions of national missions and institutional arrangements for developing regional and national strategies.	3. Make research, analyses and scenario writing cumulative, building future work on past work. Present findings to policy makers and planners for discussion and review in seminar settings.
		4. Future scenarios of societies with universal literacy, with literacy and media combinations, widespread use of media without literacy, eradication of illiteracy through expansion of primary education, etc.	
		5. Implementation of some projects as "social experiments" to test the results of particular policy initiatives.	
2.	Literacy Design Research	1. Research related to typical problems of literacy work, such as the comparative advantages of teaching literacy in the mother tongue and the national language that is not the mother tongue, retention of literacy, reading motivations of participants, reading interests of adults, selection and training of teachers, mobilization of public, field organization, coordination and follow-up.	1. Encourage targeted research by issuing research agendas every two-years.

2. Research on more basic questions such as cognitive correlates of becoming literate, literacy and conceptual skills, literacy and new roles learning, relationship of literacy with stratification and political participation, institutional transformations, etc.	2. Provide both financial and academic support to individuals and universities in the III World for conducting such research.
3. Naturalistic studies and explorations of various aspects of "living programs", and intensive versus mass campaigns.	3. Provide assistance to III World planners in the design of literacy campaigns or experimental literacy projects.
4. Synthesis of literacy research, instructional development, research, organization and communication research with implications drawn for the design of adult literacy projects and campaigns.	4. Make literacy design research cumulative and issue memos to country planners, periodically, on the design of literacy projects.

Linker roles and institutions

Appropriate research in appropriate form by itself will fail to influence policy making and planning, unless linker roles are created and institutional support networks are provided to promote dissemination and utilization.

Knowledge produced must be brought to the attention of policy makers and planners and to make sure that this happens regularly and systematically, linker roles must be created.

These linker roles must get institutional support. Unesco is an obvious institution that could create such linker roles and provide them the institutional suppport they need. Better still, the International Institute for Adult Literacy Methods because of its special focus on literacy could support some linker roles with tasks to support the policy maker and planner. A group like the Bellagio Group should use IIALM as its "literacy secretariat" as it engages in the task of coordinating the efforts of all the different bi-lateral and multi-lateral organizations in the area of literacy.

The general principles in the dissemination effort should be the following:

1. Visibility

Literacy and the need for sensible policy making and planning in the area of literacy must be given visibility. Conferences and seminars must be organized on the subject and policy debates must be staged both nationally and internationally.

2. Involvement

Involvement of Third World policy makers and planners in literacy research and research utilization is, perhaps, the most important part of a dissemination strategy. Both the power elite working within the policy making and planning subcultures and the counter-elite engaged in critiques of policy and plans should be involved in the selection of research to be conducted; the local university and professional communities must be involved in conducting research;

and presentation of policy research and policy briefs must be made at seminars and conferences attended by policy makers and planners.

3. Immediacy

Literacy research and analysis should be conducted on questions and issues being actually faced by policy makers and planners. Research results and the implications of such research should be available to policy makers and planners as and when they need them.

4. Legitimization

Once suggested policies and plans have been adopted by decision makers, they should be provided legitimization and support in their risk-taking behavior.

5. Servicing

Use of research in policy and planning may generate further needs for knowledge and data; such needs must be serviced.

In the preceding, we have suggested that empirical research in adult literacy cannot alone serve the needs of the policy maker. The policy maker would also need philosophic discussion and theoretical analysis. The planner, again, would need research that answers specific design questions.

Not only would appropriate research in appropriate form have to be available, it would have to be regularly and systematically brought to the attention of policy makers and planners by linker roles that, in turn, are provided enough institutional support.

Tasks are perhaps clear. Needed are both commitment and competence.

NOTES

1. These distinctions have been suggested in H. S. Bhola, "The Design of (Educational) Policy: Directing and Harnessing Social Power for Social Outcomes", Viewpoints, Vol. 51, No. 3, May 1975, Pages 1-16. Also in ERIC under ED 098 657.

2. See: "The Organizations's Literacy Programme: Conclusions and Recommendations of the Director-General to the Executive Board and to the General Conference on Ways and Means of Implementing 19 C/Resolution 1.192" Unesco Document No.: 20 C/71, 25 August 1978 submitted to the General Conference Twentieth Session, Paris 1978.

3. A recent paper by Henry Levin makes this same point. See Henry M. Levin, "Why Isn't Educational Research More Useful?", Prospects, Vol. VIII, No. 2, 1978, Pages 157-166.

4. Unesco: Thinking Ahead: Unesco and the Challenges of Today and Tomorrow, Paris 1977, page 243. See also Declaration of Persepolis (International Symposium for Literacy, Persepolis, 3-8 September 1975), Paris: International Co-ordination Secretariat for Literacy.

5. A recent review of literacy research will be found in J.D.N. Versluys (ed.), Research in Adult Literacy: A Bibliography, Tehran, Iran: International Institute for Adult Literacy Methods, 1977. Even though the criterion of "genuine research" has not been adhered to too strictly, few theoretical and philosophic analyses have found their way into the bibliography.

6. Neil Postman, "The Politics of Reading", Harvard Educational Review, Vol. 40, No. 2, May 1970.

7. E. Verne, "Literacy and Industrialization; The Dispossession of Speech", International Symposium for Literacy, Persepolis, 1975.

8. T. W. Schultz, "Education and Economic Growth", Social Factors Influencing American Education, National Society for the Study of Education, 1961.

9. Raymond Rosenthal (ed.), McLuhan: Pro and Con, Pelican, 1968.

10. Readers are referred to the IIALM Bibliography noted in (5) above.

11. Two recent volumes are pertinent here: (i) Manzoor Ahmed and Philip H. Coombs (eds.), Education for Rural Development: Case Studies for Planners, New York: Praeger Publishers, 1975; (ii) Unesco and UNDP, The Experimental World Literacy Programme: A Critical Assessment, Paris, 1976.

12. In this connection, the two recent publications of IIALM: Literacy Teachers: Interpretative Bibliography, Tehran, Iran: International Institute for Adult Literacy Methods, 1978; and Radio and TV in Literacy and Adult Education: Interpretative Bibliography, Tehran, Iran: International Institute for Adult Literacy Methods, 1978 should be welcome.

CHAPTER II

LITERACY WITHOUT SCHOOLING: TESTING FOR INTELLECTUAL EFFECTS

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Our topic is education and the psychology of literacy.

By education we mean the socially organized transmission of knowledge from one generation to the next so that a society's children will come to master the activities they will have to engage in as adults.

By psychology of literacy, here, we mean to designate the variety of intellectual skills that at one time or another have been linked to mastery and use of a written language.

The list of those who have speculated about such skills is a long one. We find observations about the impact of writing on human intellect in the dialogues of Plato; in classicist studies (Greene, 1951); in the professional literature of educators (Farrell, 1977); in comparative social science studies (Goody, 1977); and in the work of developmental psychologists (Greenfield, 1972; Olson, 1977).

Over the centuries and across disciplines, there has been remarkable agreement that the written word has its own peculiar psychological properties. Its relationship to memory and thinking

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is claimed to be different from that of the spoken word. But conceptions of these relationships are as diverse as the perspectives brought to bear on the question.

The earliest frame of discussion set the issue within the context of basic educational goals and values. Plato urged that the relationship of writing to intellect be considered problematic, rather than taken at face value. To the claim that letters would give men better memories and make them wise, Socrates replies that, in actuality, letters will create forgetfulness. Learners will not use their memories but rely instead on external aids for "reminiscence". Disciples of the written word will "have the show of wisdom without the reality". (Plato, Works, p. 323). On the other hand, Plato was suspicious of education that relied solely on the oral mode of the Homeric tradition. Oral thinking in this context was the enemy of logic (Havelock, 1963).

In our time, this view of the dialectical relationship between writing and mental abilities has given way to the dominant belief that literacy leads inevitably and everywhere to major transformations in human thought. Oral and literate ways of thought are often posed against each other in a modern version of the old dichotomy of primitive and civilized thought. Increasingly, literacy instruction is justified not merely as a means to material advancement for the individual and society, but as a means of transforming minds. The UNESCO Secretary General has recently urged acceleration of world-wide literacy programs to overcome the deep psychological differences between oral and literate modes of thought (UNESCO, 1965). Similar arguments are made in pedagogical discussions here at home (Farrell, 1977).

So debates about cognitive consequences of literacy are of more than esoteric or scholarly interest. They play a role in

determining priorities for national investments in education and in defining desired outcomes of schooling. Moreover, claims for consequences themselves have consequences. If, for example, we believe that literacy is a precondition for abstract thinking, how do we evaluate the intellectual skills of nonliterate people? Do we consider them incapable of participating in modern society because they are limited to the particularistic and concrete? If we believe that writing and logical thinking are always mutually dependent, what do we conclude about the reasoning abilities of a college student who writes an incoherent essay? Is this an automatic sign of defective logic? Answers to these questions have implications for social and educational policies at least as profound as those which agitated Plato.

We will consider some recent work in experimental psychology which seeks to bring an empirical perspective to these questions. Our analysis will be concerned with the way different investigators specify the relationships between literacy and intellectual skills. Oversimplifying, we will contrast two perspectives. One will be presented under the metaphor, literacy as development; the other under the metaphor, literacy as practice. The developmental framework is in an established tradition of theorizing. Its presuppositions implicitly or explicitly inform the great majority of literacy and instructional writing programs. The practice, or functional, framework is our own attempt at systematizing the knowledge we gained while investigating literacy-without-schooling among a West African rice farming people. While the two perspectives share certain starting points, we will intentionally sharpen their contrasting features to bring out their differential implications for research and educational policy. As we shall see, their differences lie both in the nature of the

evidence considered crucial for hypotheses about literacy and in the procedures for relating evidence to theory. Our purpose is not to pose them as entirely antagonistic or to argue for the "one best model". Rather we are advocating an analytic approach to literacy, one which moves beyond generalities to a consideration of particular literacies - how they are organized and used in different social contexts.

Literacy as development

First we will consider the developmental model. What is the nature of its evidence, and how does it support theories about literacy's intellectual effects? The thesis that writing promotes cognitive development was put forward in the 1960's by Greenfield and Bruner (1966). It was based largely on Greenfield's (1966) studies in Senegal, comparing schooled and unschooled Wolof children on experimental cognitive tasks. In one, children were required to sort pictures or objects into groups of things that belonged together and to explain the basis of their sorting. The array could be exhaustively grouped by form, function, or color. Three aspects of performance were singled out as especially diagnostic of levels of thinking. First, school children over trials more often shifted the basis of their grouping from one attribute to another. For example, if they sorted by color on the first trial, they might on the second trial shift to function or form. Second, when asked to explain the basis of their sorting, school children tended to state their reasons in sentences with predication, saying for example "these are red", instead of using a label "red" or a phrase, "this red", such as unschooled children tended to do. Finally, schooled children could easily answer questions about why they thought items were alike whereas nonschooled children had difficulty in doing so. Greenfield took

these performance characteristics as measures of a general ability for context-independent, abstract thinking; schooled children displayed this ability whereas nonschooled children did not.

Greenfield (1972) linked abstract thinking to writing by the following series of propositions: oral language relies on context for communication of verbal messages and is therefore a context-dependent language. In contrast, written language has characteristics which make meaning clear, independent of immediate reference. Assuming that context-dependent speech is tied up with context-dependent thought, and context-dependent thought is the opposite of abstract thought, this chain of inferences leads to the conclusion that in an oral culture, abstract thought fails to develop. Put the other way around, societies with written language provide the means for decontextualized abstract thinking. And since school relies primarily on written language, those attending school get a greater push toward abstract thought than those not going to school (Bruner, Olver and Greenfield, 1966, p. 318).

This is a specific version of an argument presented in its most general form by Bruner - namely that technologies available in a given culture determine the level and range of abilities in its members. Environments with such symbolic technologies as a written language "push cognitive growth better, earlier and longer than others", (Greenfield and Bruner, 1966).

Olson also associates himself with the thesis that literacy and education push cognitive growth. His principal contention in recent essays (1975, 1977, in press) is that there is a unique form of logical competency linked to literacy. This competency involves mastery of the logical functions of language divorced from its interpersonal functions. In Olson's words, literate in-

dividuals come to regard meaning as residing in the text. An example is the ability to derive from the sentence "John hit Mary" the logical implication that "Mary was hit by John". Another is drawing logical conclusions from propositions, based solely on their linguistic evidence without resort to their factual status. Such logical abilities are not universal, Olson (1977) maintains, but rather the "endpoint of development in a literate culture". To secure evidence of literacy-related logical processes, Olson and his colleagues (e.g., Olson and Filby, 1972) have conducted experimental studies of sentence comprehension and reasoning, comparing the performance of pre-literate, pre-school youngsters with school children of varying ages and educated literate adults. Olson's speculations about how literacy develops these abilities are based on historical analyses of cultural changes accompanying the invention of the alphabet and printing press. Both these inventions, Olson says, increase the explicitness of language, biasing cultures toward the development of explicit formal systems and accounting for distinctive modes of thought in Western societies.

This brief summary fails to do justice to the full argument of these psychologists but it does permit us to characterize some of the features of what we have been calling the developmental perspective. We focus here on what we conceive to be certain limitations and difficulties. This is not to deny the important and innovative contribution of this work but rather to caution against the notion that it has furnished evidence for literacy's effects which can provide a foundation for educational programs or that it offers a model strategy for future research.

A defining characteristic of the developmental perspective is that it specifies intellectual consequences of literacy in terms

of the emergence of new general mental capacities -- abstract thinking, for example, or logical operations -- rather than in terms of specific skills. As in developmental theories generally these abilities are presumed to characterize the individual's intellectual functioning across a wide range of content domains and tasks. Thus on the basis of a limited sample of performance in experimental contexts, conclusions have been drawn about differences between oral and literate thought which perpetuate the notion that there is a great divide in the basic competencies of people living in different societies or social groups.

This perspective goes one step further to consider capacities generated by literacy as not merely different, but higher-order capacities, because they conform to the abilities that classical psychological theories attribute to later stages in development. For decades, psychological literature has been organized around the notion that children's thinking progresses from the concrete to the abstract. Olson specifically links literacy-related logical operations to Piaget's final stage of formal operational thought. It is within this framework that statements can be made about arrested mental growth in cultures without literacy. Since this research has been based on studies of children, or comparisons of children and adults, a developmental interpretation seems to have some face validity. But can it be extrapolated without further evidence to characterize changes in intellectual operations of adolescents and adults? Whether or not these changes are "developmental", in a transformational sense, might at the very least be considered problematic.

Perhaps the most serious problem with work thus far is its vagueness with respect to the mechanisms by which literacy promotes new intellectual capacities. Piaget (1976, p. vi) himself has recently pointed out, "To explain a psychological reaction or

a cognitive mechanism . . . is not simply to describe it, but to comprehend the process by which it is formed. Failing that, one can but note results without grasping their meaning.". Both Greenfield and Olson put forward rational speculations and invoke plausible hypotheses about how literacy achieves its effects. But they offer a multitude of possibilities and no systematic theory for selecting one or another as the most fruitful for further exploration. Greenfield (1972) variously attributes effects of literacy to the structure of the written language or school-based uses of language, or growing up in a literate culture and speaking a written language. Olson (1977) stresses the effects on mental skills of the properties of an alphabetic script, exposure to the "school language of written text" or acquisition of knowledge structures based on writing. The processes involved in these alleged antecedents are neither specified nor linked to the behaviors observed on the criterion tasks.

The empirical studies thus far do not help to clarify the specific contribution of any of these experiences. In the first place, none tested literacy as such. In all research, literacy was confounded with schooling. Yet students are engaged in many learning experiences in school in addition to learning how to read and write. And we are all aware today that it is possible for children to spend many years in school without learning how to read and write. There is little guidance here for educational policies and programs. A pressing problem confronting educators is how to intervene in the instructional process to achieve literacy competencies that individuals need in the real world. To set educational goals and to plan curricula, research is needed which illuminates the actual activities that relate particular kinds of experiences with written language to particular skills.

A final observation is that the developmental perspective promotes an "inevitability" interpretation of literacy. Its assumption is that various components of literacy -- say, an alphabetic script, or essayist text -- are likely to have the same psychological consequences in all cultures irrespective of the contexts of use or social institutions in which literacy is embedded. In practice, however, the model has been elaborated in terms of institutions and technologies specific to our own society. Most particularly it has been restricted to literacy as practiced in the schools. Another persistent source of confusion stems from failure to differentiate between the social consequences of literacy over the course of human history and its psychological consequences in present-day societies. It is a big jump from intellectual and cultural history to a theory of ontogenetic development in any present-day society.

A functional approach to schooling and literacy

Let us turn now to a consideration of the functional approach to literacy developed in the course of our Vai research. We, too, have long been interested in cultural influences on the development of thought, particularly the influence of literacy (Scribner, 1968) and formal schooling (Scribner and Cole, 1973). However, we have been skeptical about the usefulness of current developmental perspectives applied to the problem of schooling and literacy. Some of our doubts arose from observation of the activities of nonschooled nonliterate adults in other societies, some from experiments comparing schooled and nonschooled individuals on cognitive tasks. We concluded from these data that the tendency of schooled populations to display generalized cognitive skills across a wide range of tasks occurred because schooling provides people with a great deal of practice in treating individual learning problems as

instances of classes of problems "of the same type". Note that while we considered literacy an important part of schooling, our guess about the mechanism promoting improved performance on developmentally sensitive psychological tasks did not rely on any implication of literacy per se. Moreover, we did not assume that the skills promoted by schooling were necessarily applied in contexts which bore no obvious relation to school experience. Applied to literacy, this orientation led us to concentrate on the actual practices which were hypothetically producing behavioral changes, looking in each case for likely causal mechanisms. What we needed was a way to examine the consequences of literacy, separate from schooling, under conditions which made literate practices maximally accessible to observation.

On the northeast coast of Liberia is a traditional society, the Vai, who are famous in Liberia for their invention of a syllabic writing system to represent their own language. Preliminary investigations (supported by our later research) indicated that a significant proportion of Vai men could read and write using this script which was invented approximately 150 years ago. While the mere existence of an indigenous writing system was enough to arouse our curiosity, we were particularly interested in the Vai for two reasons. First, except for the fact that they were predominantly Muslim, standard ethnographies of Liberia indicated that the Vai were virtually indistinguishable from their neighbors in terms of ecology, social organization, economic activities and level of material culture. In short, they seemed "just like any other Liberian people". Second, writing and reading were not activities set aside institutionally or in terms of content from other daily pursuits, nor did learning to read and write require a person to master a large body of knowledge that was not readily available

from oral sources. These two characteristics of Vai literacy made it seem an extremely interesting, if not unique, opportunity to investigate the effects of becoming literate separate from the effects of attending school or becoming educated, an inquiry which had heretofore eluded social science.

A detailed description of this work is beyond the scope of this presentation. However, a brief narrative of its major phases is needed to set the stage for making clear what we mean by a functional approach to the study of literacy and thinking.

To begin with, we carried out a combined questionnaire-test survey of something over 700 Vai adults. Our survey included a variety of tasks based on previous research showing effects of formal schooling among tribal Liberians. These tasks were included to determine if cognitive performance that was improved by schooling was similarly influenced by indigenous Vai literacy. This battery also contained sorting and verbal reasoning tasks similar to those used by Greenfield and Olson as the basis for speculations about literacy effects.

Results were clear-cut. As in previous research, improved performance was associated with years of formal schooling. But literacy in the Vai script did <u>not</u> substitute for schooling. Vai literates were not significantly different from nonliterates on any of these cognitive measures, including the sorting and reasoning tasks which had been suggested as especially sensitive to experience with a written language.

In the next phase of our work we "stepped down" one level of generality in the kinds of hypotheses we tested. Instead of looking for improvements in general cognitive performance associated with literacy, we concentrated on hypotheses that literacy promotes "metalinguistic skills". We set out to test the idea put forward

by some anthropologists (c.f., Goody, 1977) and psychologists that in acquiring literate skills, an individual acquires the ability to analyze language per se. One task tested for nominal realism - the identification of name and object; other items tested for ability to specify the nature of grammatical rules, to reason from evidence provided by a syllogism and to define words.

The outcome of this series of studies is also easily summarized. Vai literacy was associated with small increments in performance for some of the tasks (for example, increased ability to specify the nature of a grammatical error in spoken Vai), but there was no across-the-board evidence of enchanced performance associated with this traditional, non-schooled literacy. Furthermore and most damaging to the metalinguistic hypothesis, there were virtually no inter-correlations among performances on the various probes of metalinguistic ability.

At the end of our first year of field work it seemed clear that we would not make much progress in illuminating literacy skills among the Vai by administering standard laboratory tasks whose theoretical status with respect to literacy was uncertain in the first place. We decided to take a different approach. Instead of working down from developmental theories we began to work up from actual observations of how literacy was socially organized and used among the Vai. In other words, we decided to base our experimental activities on our ethnographic observations -- to let our field work generate specific hypotheses and suggest appropriate tasks.

While reading and writing are not prominent activities in the villages, Vai literates' knowledge and use of the script was manifest in many ways.

For one thing, the arrival of a taxi in town often brought with it letters, written in Vai, from relatives and business associates in other areas of Vai country and other parts of Liberia. Our survey indicated that Vai literates wrote and received between 1 and 40 letters a month, depending upon a number of factors including the kinds of economic enterprises they were involved in and the location of the town in which they lived.

Funerals are a ubiquitous feature of life in a Vai village, where the infant mortality rate exceeds 50% and life expectancy is low. Funerals attract relatives and acquaintances from many parts of the country, each of whom is obligated to bring gifts in money or kind that must be reciprocated. Consequently, lists of donors and their gifts at funerals, as well as political contributions and a variety of other activities that would come under the general rubric of public administration are a constant feature of Vai life, a feature in which literacy plays a central and visible role. Some religious and fraternal organizations maintain records in Vai script and we have documented at least one case in which a Muslim association was governed by a constitution and by-laws written in Vai script (Goody, Cole & Scribner, 1977). Farmers and craftsmen use the script for business ledgers and technical plans. A few who might qualify as Vai scholars write family and clan histories, keep diaries, and record maxims and traditional tales in copy books.

So, test results notwithstanding, we knew that Vai literacy <u>functions</u> in the society. Moreover, Vai people seem to feel that it functions well; literates are accorded status that fits the perceived utility of their skills.

With this knowledge of the variety of literacy activities, we began to look carefully at the specific skills these activities seemed to involve: what did it require to write a letter, record

contributions to a funeral feast, or list contributions to a religious society? We made functional analyses of the skills involved in these activities. Then on the basis of these analyses, we designed tasks with different content but hypothetically similar skills to determine if prior practice in learning and use of the script enhanced performance.

We will report two sets of studies, based on this strategy, each investigating a domain of skills involved in literacy practices. We will present them in some detail, since it is the detail that illustrates the central features of a functional approach.

Since letter-writing is the most common use to which literacy in the Vai script is put, we engaged in a series of studies examining the cognitive consequences of letter writing experience. In the psychological literature, written communication is said to impose cognitive demands not encountered in face-to-face oral communication. In writing, meaning is supposed to be carried entirely by the text. An effective written communication requires sensitivity to the informational needs of the reader and skill in the use of elaborative linguistic techniques. We believed it reasonable to suppose that Vai literates' experience in writing and receiving letters would contribute to the development of these communicational skills, especially since the ability to read and write letters from various people and places is considered by most Vai literates to be the marker for successful completion of the study of the script.

To test this proposition, we adapted a communication task used in previous research (Flavell et al, 1968). Individuals were taught to play a simple board game with little verbal explanation; they were then asked to explain the game, without the materials of the game present, to a listener unfamiliar with it. In addition,

we asked subjects to dictate a letter explaining the game to someone far away who had never seen it before.

The structure of the game is as follows (see Flavell et al, 1968 for details): two players alternate turns racing their counters up a board of eight colored stripes and then back again. A counter's movements are governed by the color of the chip which each player selects from a cup on each turn. Board games are not unfamiliar to the Vai, who play a game called "ludo" which is based on a similar racing format.

We coded the transcribed protocols for the amount of game-related information they contained, and for the presence of statements describing the materials of the game. On both these measures of quality of communication, we found that men literate in the Vai script were far superior to nonliterates, and that this pattern held for both the face-to-face and the dictated letter conditions.

We also analyzed communication protocols to see whether they reflected characteristics of Vai literates, style of communication in their day-to-day letter writing practices.

Over the years, Vai letters have evolved certain stylized formats. Here is a sample:

17/7/1964
Vaitown

This letter belong to Pa Lamii in Vonzuan. My greeting to you, and my greeting to Mother.

This is your information. I am asking you to do me a favor. The people I called to saw my timber charged me $160.00. I paid them $120.00 and $40.00 still needed, but business is hard this time. I am therefore sending your child to you to please credit me amount of $40.00 to pay these people. Please do not let me down.

I stopped so far.

I am Moley Doma
Vaitown

Note the statements: "This is your information. I am asking you to do me a favor." This is an example of what we refer to as a contextualization of the communication. It sets the stage, as it were, telling the recipient what the communication is all about and what information to expect. This aspect of an effective communication was well understood by Vai literates and nicely explicated to us in some of our interviews. In one discussion on what makes a good letter, a middle-aged farmer told us, "You must first make the person to understand that you are informing him through words. Then he will give his attention there. It is the correct way of writing the Vai script." When we examined game instructions for this characteristic we found that Vai literates almost always contextualized their communication by giving some general characterization of the game: For example, "This is a game I am coming to tell you about where two people take a race and one of them wins."

A second set of studies tested for transfer of skills involved in reading Vai text. Our observations of Vai literates deciphering letters from friends and coping with mundane reading activities indicated that basic decoding operations in the script are extraordinarily difficult. These difficulties stem from special properties of the Vai writing system. Vai script characters map the consonant-vowel syllabic structure of the language in a systematic manner. However, this does not produce a direct one-to-one correspondence between visual symbol and unit of sound. A phonological feature that is semantically crucial in the spoken language -- vowel tone -- is not marked in the script. Moreover, since the script is not standardized, there is considerable variability in the way in which individual script writers represent vowel length, another semantically distinctive feature of the language. Finally, the script is written without division into words or other language

units. A string of syllabic characters runs across the page without spacing or segmentation. Each character, depending on its semantic function, may represent a single-syllable word, one of several such words differentiated by tone or a component unit of a polysyllabic word.

How does the Vai literate resolve these ambiguities? From observations of men reading letters we found that a common technique is what we have called experimentation in pronunciation -- saying strings of syllables aloud recursively, varying vowel tones and lengths until they click into meaningful units. Readers must hold separate syllables in working memory until they can be integrated into words or phrases. We supposed that this experience might foster skills in language analysis and integration and that these skills might apply in language contexts that did not involve the script. To test this idea we devised a listening task. Each person listened to tape recordings in which a native speaker of Vai read meaningful Vai sentences in a slowed-down way. Sentences were segmented either into word units or syllable units. The listener was simply asked to repeat the sentence and answer a comprehension question about it. On sentences containing word units, there was no superiority for individuals with experience in Vai script. But on sentences composed of syllable units, Vai literates with advanced reading skills out-distanced all others, including those with fewer years of practice in reading.

These two tasks, and the remainder of our research, demonstrate that skills involved in literacy behaviors are indeed deployable to other nonliteracy behaviors. The effects reported -- analyzing oral speech, giving clearer instructions -- are neither self-evident nor trivial. Speech-perception and instruction are behaviors with real-life utility. These studies provide the first

direct evidence that what an individual does with text, or pencil and paper, can promote specific skills that are available to support other behaviors. In terms of the concerns with which the research began, we believe it important that these skills are associated with literacy, not schooling -- they are not byproducts of general learning experiences in the classroom. Although our demonstration of literacy-related skills is limited by the range of literacy practices in Vai society, they stand as the first clear-cut evidence in a present-day society that personal engagement in the technology of writing does have psychological consequences. But the consequences we have shown are all highly specific to activities with the Vai script.

What relevance does this have for the broad questions with which our inquiry began? At this point it is useful to return to the metaphor of literacy as a practice. This perspective helps us put the Vai research in a more general framework. By combining several dictionary definitions, we can state what we mean by "a practice". A practice may be considered to be the carrying out of a goal-directed sequence of activities, using particular technologies and applying particular systems of knowledge. It is a usual mode or method of doing something -- playing piano, sewing trousers, writing letters. This definition shares certain features with the notion of practice in educational psychology -- repeated performance of an act in order to acquire proficiency or skill. How does this apply to literacy? Take a goal-directed sequence of activities such as letter-writing. This involves a technology - a particular script and particular writing materials. It involves knowledge of how to represent oral language in script and conventional rules of representation. Other knowledge structures might be specified: knowledge of form, and style suitable to the particular genre of

personal letters; knowledge of content -- what the writer and intended reader know about the subject-matter of the message and how the new information being conveyed fits into the old. Assemblies of skills on various levels are required to perform this complex act. As one writes more letters, these skills should become more efficiently organized, less content dependent and more deployable to new contents and contexts. We did indeed find transfer of these skills in our game-instruction task. Our positive results can be summarized then, in the statement that certain literacy practices among the Vai produced intellectual outcomes closely tied to those practices.

Our negative findings are an equally important part of the story. We did not find literacy in the Vai script associated in any way with generalized competencies that might be characterized as abstraction, or verbal reasoning, or metalinguistic skills. The tasks which in North American research are used as alternative measures of these capacities simply did not produce consistent improvements in performance in any group except the schooled group. Furthermore we did not find that either literacy or schooling had an all-or-none effect. There was not a single experimental task, including those showing the strongest facilitative effects of Vai literacy, on which there were not some nonliterates who achieved high scores or displayed the same skills.

If we now compare the outcome of Vai research with that reported earlier, we are left with what appear to be two contrasting conclusions about the effects of literacy. One line of work would have us believe that literacy, in combination with schooling, produces generalized changes in the way people think. The second leaves us believing that the effects of literacy, and perhaps schooling as well, are restricted -- perhaps restricted to the

practice actually engaged in, or generalized only to closely related practices.

Those with a bent for history may recognize these extreme alternatives as an echo of an educational debate which began at the turn of the century. Thorndike and Woodworth (1901) suggested that learning was specific and transfer from one task to another would occur only when both tasks shared identical elements. Their antagonists believed that education, via mental discipline, strengthens the mind in general. At the time there was no theory of what identical elements might consist of and no body of developmental theory which could give substance to the mental discipline position. Even with 75 years of intervening debate and data accumulation, the issue of the effects of practice has not been resolved. We have no illusions that the skimpy data at our disposal with respect to literacy will resolve the discrepancies between the two viewpoints which we have been contrasting.

But the framework we developed in studying literacy among the Vai may help us rethink literacy and its effects in a way that does not get us lost in generalities that we cannot support or particulars that seem nonsignificant.

It is well to keep in mind that the specificity of outcomes that we observed in our studies of Vai literacy are in keeping with earlier observations that certain cognitive skills show little generalizability across experimental tasks among traditional adults. In fact, the situation with respect to Vai writing and reading is not dissimilar from that of other skilled practices in many non-technological societies, such as weaving (Childs & Greenfield, in press) or pottery-making (Bunzel, 1953). Highly organized, complex skills are applied to a limited set of problems. Previously we argued (Scribner and Cole, 1973) that such a situation would not be

expected to produce generalized skills. We would expect the same to apply to Vai writing.

But as the technology of society becomes more complex, the number and variety of tasks to which literate skills must be applied increases as well. Each task will include some mix of a common core of skills (decoding, for example) and new skills or more complicated versions of old skills (as, for example, when Vai tradesmen begin to write to people they have never met before because business practice begins to dictate the necessity). If our argument that specific skills is valid, we might expect to find outcomes such as Olson or others predict but only under conditions invoking these skills: carrying out critical analyses of text might promote certain analytic operations with language; rote learning from the same text, or reading it for some other purpose, is not likely to do so. Writing poetry is likely to have different consequences for language skills than preparing a letter to a department store requesting a refund for damaged goods.

As practice in any activity continues, we would expect the range of materials which engage it to be extended and skills to become increasingly free from the particular conditions of the original practice. Skills, then, will be more available for what has been called "far transfer", including tasks and situations that do not involve the written modality. When skill systems involved in literacy are many, varied and complex, and have wide applicability, the functional and general ability approaches will converge in their predictions of intellectual outcomes. Whether we choose to interpret these acquired functional skill systems within a developmental perspective is a matter of theory predilection which lies outside the argument of this paper.

While we do not advocate a single approach to such complex issues as those involved in the psychology of literacy, we believe that the strategy of functional analysis emerging from the Vai research may have particularly useful implications for educational research in our own society. To begin with, it suggests that various activities with literacy need to be analyzed independently. If, as we have demonstrated, particular skills are promoted by particular kinds of literacy practices we need to know a great deal more about how literacy is practiced. Studies of the range of reading and writing activities carried out in school, including those lying outside the official curriculum, would be useful. There are research precedents here on which to build (see, for example, Martin et al, 1976). We have far fewer precedents, however, for an equally important research task: finding out what people in various communities and walks of life do with literacy -- how they use their knowledge of reading and writing, to what tasks they apply it, how they accomplish these tasks. Such analyses should help us understand the differences between school-based literacy practices and nonschool literacy practices, and their possible differential implications for intellectual outcomes. While attempts to arrive at some overall measures of literacy competencies may be useful for certain comparative purposes, the representation of literacy as a fixed inventory of skills that can be assessed outside of their contexts of application has little utility for educational policies.

Lest this sound prescriptive, we need to acknowledge that we are a long way from having the methods, techniques, and theories required to make a systematic analysis of component skills involved in reading and writing activities. Considerable progress has been made in identifying components in decoding activities, and,

more recently, in higher-level intellectual skills involved in controlled reading tasks under laboratory-like, or highly constrained classroom conditions. (See especially Technical Reports, Center for the Study of Reading). Sticht et al, (1977) has further extended a skills analysis approach to reading activities outside the classroom and has contributed the important distinction between reading-to-do and reading-to-learn activities. The long-range objective is to devise methods for an adequate description and analysis of skills in out-of-school literacy practices that will articulate with the more micro-level analyses available from laboratory studies.

Educational practice as well as educational research might benefit from a recognition of the complex inter-relationships between mental skills and literacy activities. Terms such as oral and literate modes of thought, while of historical significance, are not useful characterizations of the mental abilities of nonliterate and literate adults in our own society. The great bulk of cross-cultural research with adults in traditional societies disputes their applicability to <u>any</u> contemporaneous culture. Thus there is no basis for designing adult literacy programs on <u>a priori</u> assumptions that nonliterates do not think abstractly, do not reason logically, or lack other basic processes. In each case, the skills that are available for learning how to read and write, or improving rudimentary literacy abilities, need to be determined and evaluated with respect to the accomplishments nonliterates display in other activities -- disputation, for example, or hypothetical reasoning, or oral narrative. To the question posed at the beginning of this paper -- is an incoherent essay symptomatic of faulty reasoning? -- our answer would be, "no, it is not a symptom. It is a sign whose significance needs evaluation". A recent essay in

College English (Farrell, 1977, p. 451) stated that "the cognitive restructurings caused by reading and writing develop the higher reasoning processes involved in extended abstract thinking." That kind of thinking does not appear a useful guide to instruction.

If different literacy activities are linked to different outcomes, a second implication of the research is that reading and writing activities need to be tailored to desired outcomes. Outcomes can be defined in terms of literacy competencies required for participation in our highly technological society, but they need not be defined in narrowly pragmatic terms, reflecting merely the press of today's demand for job security or advance. A skills approach is useful here. Can we identify skills that constitute a common core or scaffolding that will enable an individual to continue to master more intellectually demanding reading and writing tasks after the school curriculum or literacy program is concluded? A second aspect of desired outcome has to do with training in intellectual skills. If the teacher's objective is to foster analytic logical reasoning skills, that objective should guide the choice of instructional program. It need not be assumed that these will follow inevitably from practice in writing essays. Writing essays may, under certain task organizations, be helpful. So may practices in an oral modality. This is undoubtedly the common wisdom of the classroom and the educational planner. But it would be helpful to ally this wisdom with the psychological literature on literacy so that the broad conceptual framework informs the theory.

We realize that the kind of program implied by our discussion is a tall order and one that seems a distance away. But the comments of the Soviet psychologist Vygotsky (1934) some 50 years ago on the status of the specific-skill versus mental-development

argument of his day offer useful guidance for our research choices today: "Such a matter cannot be dealt with by a single formula of some kind but rather suggests how great is the scope for extensive and varied experimental research." (p. 34).

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CHAPTER III

PRIMARY SCHOOL LEAVING EXAMINATIONS, BASIC INTELLECTUAL SKILLS, AND EQUITY : SOME EVIDENCE FROM KENYA

B.M. Makau and H.C.A. Somerset

A. INTRODUCTION

A salient characteristic of third-world education systems is that the basic, "open-access" cycle, during which all children may attend school irrespective of their achievement, is of brief duration. Most low-income countries can afford to provide unrestricted education to all who want it for only about six to nine years.

In Kenya, the open-access cycle runs for seven years, although a high proportion of pupils repeat at least one year, and so take eight or nine years to complete. At the end of this period, pupils must establish their right to further government-maintained education by achieving high scores in a national examination, known as the Certificate of Primary Education, or CPE. In 1978, about 250,000 pupils will sit this examination, and of these only a little over 30,000 will be admitted to government-maintained secondary schools at the beginning of 1979. The remaining 220,000 will have three main alternatives open to them. About 70,000 are likely to return to primary school for a further year, in the hope of getting better CPE scores at a second attempt. A further 60,000 to 70,000 will

enter unaided secondary schools, where despite paying fees three or four times higher than those charged in government schools, they will receive education that is much inferior. Finally, about 80,000 will try to find for themselves some form of activity which brings a financial return, mostly in farming or unskilled work.

Not surprisingly, the Certificate of Primary Education is highly unpopular. There is a great deal of pressure, from parents and educators alike, to abolish the examination altogether. Two recent influential reports, the International Labour Office Report of 1972 and the National Committee on Educational Objectives and Policies Report of 1976, both recommended that the basic cycle of education should be extended from seven to nine years, and that this longer cycle should be terminated by an entirely restructured examination. To ease the transition between education and employment, the final two years of this extended course would be heavily biassed towards pre-vocational subjects.

But the advantages of the nine-year education system are not so clear-cut as these two reports suggest. Few if any countries spend a higher proportion of their public and private resources on education than Kenya. At present, over 30% of annual government expenditure goes to meet the costs of the formal education system, and if the costs of training programmes run by Education and other Ministries are included, the proportion goes up to over 40%. Extending the primary cycle from seven to nine years might well push expenditure beyond an acceptable level, especially if the final two years had a strong pre-vocational bias. Subjects such as carpentry, agriculture and office studies are much more costly to teach effectively than the traditional school subjects, for two main reasons. In the first place, heavy expenditure on equipment and materials is needed. A skillful mathematics teacher can manage quite well with an exercise

book, pencil, and ruler for each pupil and a textbook shared between two or three; but a carpentry instructor can do little unless he has several sets of tools, workbenches, and a good supply of timber. Secondly, salaries to teachers of pre-vocational subjects must be higher than those paid to other primary teachers if the profession is to compete effectively with the private sector for the best people. Away from the classroom, the skills of a primary mathematics or English teacher are not highly valued in the labour market, but a secretarial teacher who can type a letter quickly and accurately or a carpentry instructor who can make a good-quality chair at low cost is in a strong bargaining position.

One way of meeting the increased costs would be to charge high fees for the additional years of the extended cycle. But this would mean abandoning the principle of open access: the additional years would remain selective, but with the important difference that the main criterion for selection would not be examination achievement, as at present, but rather the ability to pay. Many capable pupils from less-privileged backgrounds would be excluded.

The alternative would be to increase the share of government revenue allocated to education. But as we have seen, education already absorbs more than 30% of total government expenditure. Any further increase would almost certainly endanger investment in developments which directly create employment. A shilling put into extending the basic education cycle might well be a shilling taken out of irrigation development, crop improvement, or industrialisation. Education does not, of course, create jobs: it simply equips people with some of the skills they need to compete for existing employment opportunities. It would be a sad irony if a programme of educational expansion designed largely to relieve the problems of school-leaver unemployment were to act as a brake on the development of new employment opportunities.

Given these constraints, it seems inevitable that progress towards full implementation of the current proposals for primary school reform will be slow. There are still many parts of the country, particularly in the arid and semi-arid regions, where only a minority of children attend school at all, despite the fact that primary school fees are being progressively abolished. Both the ILO and the NCEOP Reports agree that first priority should be given to making the present basic cycle universal: only when this has been achieved should the cycle be extended from seven to nine years.

Even when the new primary system is in full operation, the problem of how to select pupils for access to further education will still remain. The Certificate of Primary Education may be abolished, but another selection examination, for pupils a little further along the educational pipeline, will have to take its place. In all probability, the new examination will resemble its predecessor in many aspects. The option of abandoning selection altogether, and allowing all pupils to continue their primary and secondary education for as long as they want, irrespective of their achievement, is not open to low-income countries such as Kenya.

Given that selection is inevitable, it is important to ensure that it is carried out as efficiently and fairly as possible. The consequences of success or failure in the Certificate of Primary Education are enormous. The highest-scoring candidates who enter the best national-catchment secondary schools can probably expect, on the average, lifetime earnings at least twenty times as high as those who fail to gain a place in any government-maintained secondary school.

Because its consequences are so drastic, the examination has powerful backwash effects on teaching in the upper primary school. In standards six and seven particularly, the effective curriculum is defined not by the content of the textbooks or the official syllabus, but by the questions included in recent CPE examinations. In one

school visited recently, standard seven pupils had sat no fewer than seventeen examinations during the first nine months of 1978, and most of the questions they had been asked had clearly been based on old CPE papers. About half of these seventeen examinations had been for the school's candidates only, but the others had been full-scale "mock" CPE's, starting with a number of "zonal mocks", sat by pupils from a group of adjacent schools, and culminating in a "district mock", sat by all pupils in the district.

In the sections which follow we shall discuss a programme of research and action carried out over the past five years, designed to reform the CPE. There have been two main aims: first, to improve the efficiency and equity of secondary school selection, and second, to utilise the backwash effects of the examination to ensure that the knowledge and skills taught in the upper primary standards are appropriate to the needs of pupils who will not enter secondary school.

B. CHANGES IN THE CPE EXAMINATION

Three of the four papers which make up the CPE examination are in multiple-choice form. These are English, Mathematics and the General Paper. Four alternative answers are provided to each question so that a candidate who simply guesses has a 25% chance of answering correctly. The general paper is made up of a history section (20 questions) a geography section (20 questions) and a science section (40 questions). The mathematics papers contains 50 questions, while the number of questions in the English paper has varied between 40 and 70. These three objective papers are all marked by computer. The fourth paper, English Composition, is of course in essay-type form, and is marked by teams of secondary school teachers.

The CPE was first established in its present form in 1966. By the early 1970's it had been subjected to a good deal of criticism, much of which was summarised in the ILO and Bessey Reports, both published in 1972. Three main points were made:

1. The CPE was almost entirely a tool for secondary school selection; little attention was given to testing knowledge and skills needed by terminal pupils. In mathematics and science especially, the examiners wrote many items testing secondary-level topics, presumably on the grounds that if a candidate could cope with these topics at primary school, he would handle them even better at secondary school. But an item analysis of the 1971 mathematics paper, discussed in the ILO Report, showed clearly that, paradoxically, it was precisely the items which explored secondary level skills which were least effective in discriminating between the more capable and less-capable candidates. By contrast, many of the items which test basic numeracy skills were highly efficient. The main reason why many secondary-level items discriminated weakly was that most primary school teachers were themselves unable to cope with secondary-level mathematics, and hence could not teach it to their pupils. Thus all candidates, capable and less-capable, were reduced to random guessing.

These results suggested strongly that if the CPE examination were made more appropriate for terminal candidates, it would also become a better secondary school selector:

> "In the past there has been a great deal of discussion on the apparent incompatibility of the two functions of the examination for the certificate of primary education: selecting pupils for secondary education and providing a leaving certificate for children who do not pursue their formal education beyond the primary stage. It has even been suggested that there should be two separate examinations. Our data, however, tend to show that this incompatibility is largely illusory. If the mathematics paper were confined to questions testing

> basic computational skills, numerical reasoning ability and competence in solving practical mathematical problems, it would not only be a much more useful terminal examination than it is at present but it would also, in all probability, be a more efficient instrument of selection. The practical part of the paper could include shopkeeping problems, simple farming and business accounts, the calculation of crop yields, and a wide range of other problems likely to be met with by the school leaver engaged in agriculture or self-employment."

2. A high proportion of CPE questions, including nearly all of those in the general paper, tested nothing more than simple recall of memorised facts. In the words of the Bessey Report:

> "The examination in its present form tests achievement only. It is not designed as a test of innate ability nor (which is not quite the same thing) as a predictor of performance in secondary school. It will therefore tend to be to a considerable extent a test of the primary teachers, and to that extent unfair".
>
> (Para. 13. 10, page 129)

It seemed apparent that if the CPE tested the ability to reason as well as the ability to remember, it would be both more efficient and more equitable as a selection device. Pupils of high ability who did not show their potential in conventional tests of attainment because of poor teaching or other environmental handicaps would stand a much better chance of winning a secondary school place.

3. The questions asked in CPE tended to involve objects and situations more familiar to urban candidates, especially those from high-income backgrounds, than to rural candidates. The ILO Report noted, for example, that efforts to introduce a rural aspect into primary science teaching and to encourage pupils to draw on their

local environment had been largely nullified by the selection examination. Only 17 of the 250 questions included in the 1971 CPE related in any way to agriculture.

Many examples of the urban and high-income bias of the CPE papers of the early 1970's could be given. For instance, one of the two comprehension passages included in the 1970 English paper concerned an experiment carried out in a school laboratory, involving a bunsen burner, a spirit lamp, and a mercury thermometer; while the other passage described how books in a school library are catalogued and arranged according to subject and author. Very few rural primary pupils have ever seen a science laboratory; while libraries, where they exist at all, usually consist of a shelf or two of books in a cupboard in the staffroom.

The reforms which have been introduced into the CPE examination were designed mainly to meet these three major criticisms. The changes can be summarised as follows:

1. The CPE is now a more effective terminal examination. The proportion of questions which test knowledge and skills useful to the primary school leaver has increased substantially.

2. Questions which require the candidate to demonstrate his ability to reason are now included in most subjects.

3. A high proportion of items now draw on situations and experiences familiar to rural children. It has not been found possible to eliminate urban or rual bias from individual items, but an attempt is now made to maintain a balance.

The changes outlined above were not conceived of as a unified programme of reform, to be introduced in all subjects at the same time. Rather, the approach was gradual and pragmatic. The effects of each year's changes were monitored through item analysis, and decisions as to the next year's papers taken in the light of the findings. This process still continues; the 1979 papers will doubtless

differ substantially from those set for 1978. Evaluation has always been retrospective: it has not been possible so far to pre-test new types of question before including them in the examination.

The details of the changes introduced differ a good deal from subject to subject, as does their timing. We shall discuss each subject in turn.

The changes in the English paper started as early as 1971, three years before those in any other subject. At that time, twenty verbal reasoning questions were substituted for the same number of questions testing English grammar.

No further changes were made until 1975, when the paper was modified so that it took more account of the context in which rural pupils hear and use the English language. Most rural English speakers, including teachers, have only a limited grasp of the conventions and idiomatic usages of the standard version of the language. They use English mainly in rather formal situations, where clarity of meaning is more important than fluency and variety of expression. Hence questions testing unusual words, phrases and idioms were eliminated from the paper altogether. Examples of such expressions from the 1973 and 1974 papers include "plucked up his courage", "not of his standing", "for company" and "in their teens". Similarly, it was decided that questions testing points of grammar where the commonly-heard Kenyan usage differs from the correct usage in standard English should be omitted in certain cases.

In addition to these changes, the balance of questions in the 1975 paper was altered sharply in favour of comprehension, at the expense of grammar and syntax. The proportion of comprehension questions rose from under 25% to 50%, while the proportion of grammar and syntax questions fell correspondingly. The remaining 25% involved verbal reasoning. With only slight variations, these proportions have been maintained since 1975.

Changes in the science section of the general paper started in 1974, and have been perhaps more radical than those for any other subject. They can be described under two main headings. First, there has been a change in the types of intellectual skill measured. Fewer questions now require straightforward recall of factual material, while more questions test higher-level cognitive skills, such as the ability to understand relationships of cause and effect, and the ability to use reasoning to draw inferences from data. Second, there has been a change in the content of the questions. A substantial number now have a clear rural bias: some can be answered from observation of objects and situations common in rural environments; while others test knowledge or skills especially relevant to the needs of rural primary school leavers. We shall illustrate these changes with examples.

Until 1974, up to half the items in each year's science paper tested knowledge of technical terms:

Example No. 1 Soils which are found near lakes such as Rudolf and Magadi are usually

A	B	C	D
calcareous	volcanic	alluvial	saline

(No. 54, 1972 paper)

Example No. 2 When salt is mixed with water, salt will dissolve. Salt is said to be a

A	B	C	D
solvent	solute	solution	mixture

(No. 59, 1973 paper)

Example No. 3 The wires in an electric circuit are usually covered with substances such as plastic or cotton. These substances are called

A	B	C	D
conductors	resistances	radiators	insulators

(No. 85, 1972 paper)

As can be seen from Table 1, the number of knowledge items of this type was reduced from 19 in 1973 to only four in 1974. Since then, they have been virtually eliminated from the paper.

Table 1. CPE science: types of questions asked between 1973 and 1977

Item Type	Number of items				
	1973	1974	1975	1976	1977
Knowledge					
(a) Specialised items	19	4	0	1	0
(b) Non-specialised	9	8	6	8	10
Understanding	7	12	10	11	12
Observation	3	8	13	8	9
Reasoning	0	8	11	11	9

NOTE: Two questions in 1973 and one in 1976 involved mainly numerical calculation.

Other knowledge questions, not involving scientific terminology, still make up about one-quarter to one-fifth of the science paper. But, a high proportion now test information which is especially relevant in rural areas:

Example No. 4 There have been several outbreaks of cholera in Kenya recently. Which of the following does NOT help to prevent the spread of cholera?

A. Digging pit latrines.
B. Boiling all drinking water.
C. Eating foods containing vitamins A and D.
D. Washing hands carefully before eating.

(No. 59, 1976 paper)

The proportion of items testing higher-level skills - understanding, observation and reasoning - has increased substantially in recent years as the proportion of knowledge items has dropped.

The boundary between knowledge and understanding items is by no means always clear. Both types involve recall, but whereas knowledge items focus on specific facts, understanding items are concerned with how facts fit into wider contexts. In some questions, the candidate is asked to show how remembered facts can be applied to a new situation:

Example No. 5 Wanjiku works in a health clinic. A mother brings a small child suffering from kwashiokor. The mother says she cannot afford to buy meat, eggs, or milk for her child. What should Wanjiku advise her to do?

A. Give the child bananas or oranges from her shamba to eat each day.
B. Bring the child to the clinic each week for injections.
C. Feed the child with plenty of posho or ugali.
D. Use more beans or groundnuts in preparing the child's food.

(No. 68, 1977 paper)

In other items of this type, the candidate must show that he understands cause-and-effect relationships between facts. These items are concerned with the questions "how" and "why", and the word "because" often appears in the stem:

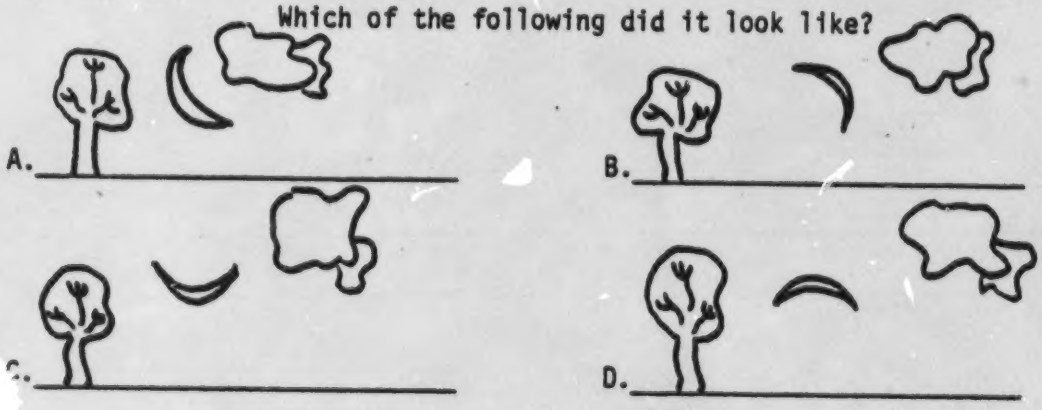
Example No. 6 Hadija put clay around the sides of her jiko (charcoal brazier), leaving the holes open, and let it dry. This made the jiko work much better because it

A. made the jiko heavier
B. allowed wood to be burned in the jiko
C. reduced the loss of heat from the sides
D. increased the flow of air to the jiko

(No. 59, 1977 paper)

A third group of items tests observation. An observation or experiment is described in the stem of the item, and the candidate is asked what he would expect to happen. It is, of course, possible to learn the answers to these questions from a textbook, but pupils who have carried out the observation have a clear advantage:

Example No. 7 Kamau saw the new moon shining very low in the sky. Which of the following did it look like?



(No. 49, 1977 paper)

Very few observation items were included in any science paper prior to 1974. They now make up about one quarter of the questions.

The final group consists of reasoning items. The pupils are given a set of facts in the stem of the question, and then asked to draw an inference from them. It is intended that the facts should be unfamiliar to the candidates. In other words, pupils must show that they can carry out the processes by which elementary scientific conclusions are established from data.

Examples No. 8 and 9

Use the information below to answer questions 62 and 63.

Scientists in Kenya experimented with three different varieties of maize called Hybrid 511, Hybrid 613 and Composite IC. They wanted to find out which variety would give heavier crops at different altitudes. The results of their work are given below:

Height of the farm above sea-level	Weight of the crop per hectare with: Hybrid 511	Hybrid 613	Composite IC
500 metres (1600 ft)	3200 kg	2800 kg	4100 kg
1200 metres (4000 ft)	3400 kg	3300 kg	3800 kg
2000 metres (6500 ft)	4900 kg	7000 kg	3800 kg

62. Imagine you are an Agricultural Assistant working in Voi (400 metres above sea-level). Judging from these results, which one of the three varieties of maize would you think best to recommend to farmers in your area?
   A. Hybrid 511
   B. Hybrid 613
   C. Composite IC
   D. All varieties would be equally suitable

63. Using the same results, which one of the following is correct?
   A. At 2000 metres above sea level, Hybrid 613 maize gave the heaviest crop.
   B. The yield given by Hybrid 511 maize was the same at all altitudes
   C. At 1200 metres above sea-level Hybrid 511 yielded a heavier crop than Composite IC
   D. Composite IC maize yields a heavier crop at 2000 metres than it does at 500 metres above sea-level

(1977 paper)

The first reasoning questions appeared in CPE science in 1974. Since then, they have made up about one-quarter of the questions each year.

The questions quoted above were chosen to demonstrate the changes which have been made in the types of cognitive skill tested by CPE science since 1973. But they also illustrate the content changes. Questions No. 4, 7, 8, and 9 all have a clear rural bias. Few pupils in urban areas spend much time looking at the moon, nor do they know a great deal about different varieties of maize. No. 5 and 6 should favour pupils from low-income families in both rural and urban areas. Pupils from urban high-income families do not often use charcoal braziers, and they have little first-hand experience of the symptoms of kwashiokor.

Similarly, Nos. 4, 5, 6, 8 and 9 are examples of questions which are especially appropriate to a terminal examination. They all test knowledge and skills which are likely to be relevant to the needs of the CPE candidate who does not gain a secondary school place.

The changes made in the remaining papers can be described more briefly. In geography and history, the changes have paralleled closely those made in science, but they did not begin until 1976. The proportion of question testing memory for isolated facts - names, dates, places, etc. - has been sharply reduced. Correspondingly the proportion testing understanding of cause-and-effect relationships has been increased. The geography paper also includes reasoning items.

In mathematics, starting from 1974, items testing secondary-level skills (see page 50 above) were reduced in number. Fewer questions testing formal geometry were asked, and the algebraical problems were simplified. More recently, however, the picture has been complicated by the introduction of a new "modern mathematics" course. Many

of the topics covered, including number bases, transformation geometry, and set theory, seem more appropriate to the secondary than to the primary level. Hence their introduction into CPE may reverse the effect of the previous changes. The first pupils who had followed the new syllabus sat CPE in 1977, but the full effects of the changeover on performance will not be apparent until the 1978 results are available.

C. EQUITY EFFECTS OF THE CHANGES IN CPE

Since 1973, the effects of the changes in CPE discussed in the previous section have been monitored, by comparing the performance of pupils from rural low-income, Nairobi low-income and Nairobi high-income backgrounds. The samples used are as follows:

1. The rural low-cost sample. This sample consists of 5% of all low-cost (Schedule A) schools in rural districts of Kenya, randomly chosen. All CPE candidates in the selected schools are included. The number of pupils in the sample has risen from about 8,300 in 1973 to 11,700 in 1977.

Schedule A schools now charge no fees at all in the first five standards, and only shs.60/- (US $8) in standards 6 and 7. Building fees and other charges, however, usually bring the total cost of attendance up to about shs.150/- per annum for an upper-standard pupil. Under the system of racially-segregated education operated in Kenya during the colonial period, Schedule A schools were reserved for pupils of African origin. They are now open to all ethnic groups, but in fact the great majority of pupils who attend them come from low-income African families. About 95% of all primary schools in Kenya are in the rural Schedule A category.

2. The Nairobi low-cost sample. This sample consists of 20% of the Schedule A schools controlled by the Nairobi City Council. These schools charge the same fees as Schedule A schools in other parts of the country, but their buildings and equipment are superior and their teachers better trained. The sample numbered about 800 pupils in 1973 and 900 in 1977.

3. The Nairobi high-cost sample. The third sample consists of all pupils sitting CPE from the eight Nairobi high-cost (Schedule C) schools. These schools originally catered for Europeans only, but a short time before Independence the racial criterion for admission was abandoned. However, the other two criteria - competency in English and ability to pay the fees - were retained. During the 1960's, the number of African children attending these schools rose rapidly, and they now make up about 90% of CPE candidates. Most of the remainder are Asians; fewer than 2% are Europeans. Schedule C schools teach through the medium of English from Standard 1, whereas most Schedule A schools now follow a mother-tongue programme for the first three years. The total cost of attending a Schedule C school is about shs.900/- per year. Competition for admission is intense: most Schedule C schools receive at least six applications for each Standard 1 place each year. This sample totalled about 500 candidates in 1973, and about 630 in 1977.

In each year since 1973, the average performance of candidates in these three samples has been determined for each CPE subject and each item. For simplicity we shall focus on only two of the samples: Nairobi high-cost and rural low-cost. Until 1975, the performance profiles of the two low-cost samples - rural and Nairobi - were strikingly similar; the proportion of pupils answering each item correctly did not usually differ by more than a few percentage points. Over the past three years more significant differences have begun

to appear, but the major contrasts are still those between high-cost and low-cost schools.

Table 2a and 2b. CPE performance differences between Nairobi high-cost and rural low-cost schools.

2a. Expressed in standard deviation (z - score) units

	1973	1974	1975	1976	1977
English	2.0	2.26	2.02*	1.50	1.73
Mathematics	1.5	1.20	1.01	1.07	1.24
Science	0.8	0.90*	0.91	1.15	1.17
Geography	0.6	0.70	0.54	0.78*	0.75
History	0.6	0.64	0.41	0.72*	0.92

Note: The performance differences for 1973, especially those in science, history and geography, are approximate only.

2b. Expressed as the proportion of pupils from rural low-cost schools scoring higher than the median candidate from Nairobi high-cost schools.

	1975	1976	1977
English	3.2%	4.2%	3.0%
Mathematics	18.0%	16.7%	10.6%
Science	19.6%	13.0%	13.8%
Geography	29.8%	22.9%	21.4%
History	33.0%	25.7%	17.6%

Tables 2a and 2b show the performance differences between the Nairobi high-cost and rural low-cost samples for the five years between 1973 and 1977. In Table 2a, the differences are expressed in standard deviation (or z - score) units. For example, in 1975 the average mathematics mark scored in Nairobi high-cost schools was 1.01 standard deviations higher than the average scored in rural low-cost schools. Because standard deviations are used instead of raw marks, the differences can be directly compared, from subject to subject and from year to year. For English, science, geography and history an asterix is placed alongside the entry for the year in which the first major changes were introduced. (No definite year can be identified for mathematics.)

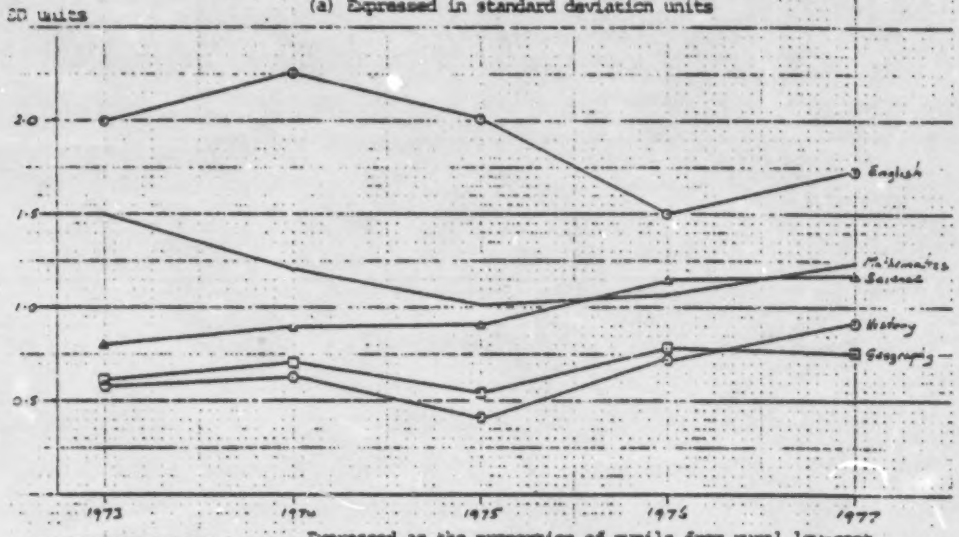
Table 2b shows the data in a more concrete form. It gives, for each subject and year, the proportion of rural low-cost candidates who performed better than the middle (median) Nairobi high-cost candidate. In 1975, for example, 33.0% of rural low-cost candidates performed better in history than the median Nairobi high-cost candidate. Parity of performance between the two samples would, of course, be achieved if the proportion reached 50%. Unfortunately, the data needed to calculate the differences in this way are not available for 1973 and 1974.

The data of Tables 2a and 2b must, of course, be interpreted in opposite directions: a high performance gap is indicated in Table 2a by a high figure, but in Table 2b by a low figure. Figures 1a and 1b show the same data as Tables 2a and 2b respectively, but in graphical form.

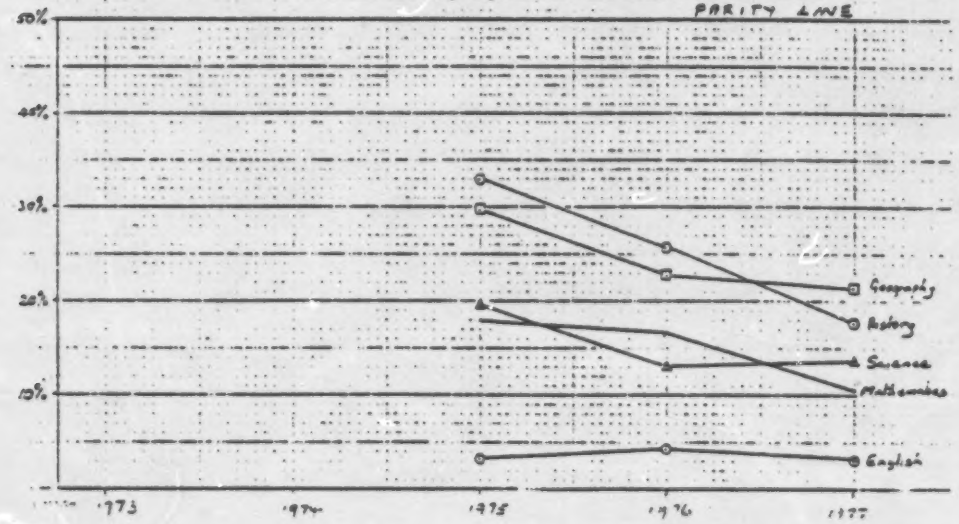
It is immediately apparent that the changes in CPE have not reduced the overall performance gap between Nairobi high-cost and rural low-cost pupils, as had been hoped. On the contrary, in science, history and geography the gap has widened since the reforms were introduced. Only in English is there evidence of an overall narrowing, and even this trend was partially reversed in 1977.

Figures 1a and 1b CPE performance differences between Nairobi high-cost and rural low-cost schools

(a) Expressed in standard deviation units



Expressed as the proportion of pupils from rural low-cost schools scoring higher than the median NHC candidate



We shall consider the changes in science first. It will be remembered from the previous section that the first reforms in the subject were introduced in 1974, and extended in subsequent years. The proportion of items testing recall of specific facts was reduced over a two-year period from about three-quarters to about one-quarter, and the proportion testing higher-level skills, including scientific reasoning, correspondingly increased. Further, the content of the paper was changed so that many more items drew on objects and experiences familiar to rural pupils. But despite these reforms, the performance advantage enjoyed by Nairobi pupils in high-cost schools rose from 0.8 to 0.9 of a standard deviation between 1973 and 1974, and since then has continued to grow steadily. In 1975, 19.6% of rural low-cost pupils performed as well as the median Nairobi high-cost pupil, but in 1977 this proportion was only 13.8%.

In history and geography, the first moves away from pure knowledge items did not come until 1976. But as with science, the reforms were associated with an increase in the performance gap. Between 1975 and 1977, the proportion of rural low-cost pupils performing better than the median Nairobi high-cost pupil dropped from 33.0% to 17.6% in history, and from 29.8% to 21.4% in geography. No consistent changes had been apparent before the reforms.

The pattern in English is different. In 1974, the performance gap between the two samples was no less than 2.26 standard deviations, nearly twice as large as the gap for mathematics, and more than three times as large as those for geography and history. As we have already seen, modifications to the English paper began in 1975, when items testing idiomatic or unusual meanings were omitted, the proportion of grammar items was reduced, and more straightforward, descriptive passages were chosen for the comprehension items.(1) The performance gap dropped to 2.02 and 1.50 in 1975 and 1976 respectively, but in 1977 there was a small rise to 1.73.

No clear trend can be seen in the profile for mathematics. The performance gap dropped between 1973 and 1975, but rose again between 1975 and 1977. The partial changeover to the new mathematics syllabus may have had some influence on the result for 1977, but the full effects will not be apparent until the 1978 examination has been analysed.

We can now examine the relationship between the increase in the performance gap for science, history and geography, and the reforms introduced in these subjects. First, to what extent can the increase be attributed to the change in emphasis from knowledge items to items testing higher-level intellectual skills? Table 3 sets out the evidence for science, aggregated for the four years 1973 to 1976.

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(1) A detailed account of the English items which caused rural low-cost pupils particular difficulties is given in the item analysis of the 1974 CPE, pp 10-18 and Appendix B, (Institute of Development Studies, Nairobi, 1975). See also H.C.A. Somerset: Aptitude tests, socio-economic background, and secondary school selection: the possibilities and limits of change. IDS Nairobi Discussion Paper No. 249, 1977.

Table 3. CPE science 1973-76: performance gaps between Nairobi high-cost and rural low-cost pupils in items involving various types of intellectual skill.

Type of item	Number of items	Proportion answering correctly		Performance gap
		Nairobi high-cost	Rural low-cost	
Knowledge:				
(a) Specialised terms	23	63.72%	52.64%	11.08%
(b) Non-specialised	29	72.51%	59.95%	12.56%
Understanding	35	66.87%	52.00%	14.87%
Observation	28	68.78%	51.10%	17.68%
Reasoning	28	66.00%	45.61%	20.39%

Note: Items which showed technical defects in construction are omitted from this and subsequent tables.

It is clear that rural low-cost pupils are at much less of a disadvantage in the pure recall items than they are in items testing higher-level skills. They are relatively most successful in remembering the meanings of scientific terms - solute, saline, calcareous and the like. Their average score in items of this type was only 11.08% behind that of Nairobi high-cost pupils. In items testing understanding of causes and reasons the performance gap rises to 14.87%, and in observation items to 17.68%. But it is in items involving scientific reasoning that rural low-cost pupils are at their greatest disadvantage: their average score is 20.39% lower than that of the Nairobi high-cost sample. Far from reducing the effects of poor teaching and other en-

vironmental handicaps on the performance of rural low-cost pupils, the move away from pure knowledge items seems to have exacerbated the differences.

The effects of the changes in skill-level just discussed were to some extent compensated by the content changes. It is not difficult to identify items from recent papers where, because they had greater familiarity with the subject matter, rural pupils closed or even reversed the performance gap. For example, the question on precautions to be taken against cholera from the 1976 paper quoted above (see example No. 4, page 56), was answered correctly by 53.6% of rural low-cost candidates, as compared with only 50.6% of Nairobi high-cost and 50.7% of Nairobi low-cost candidates. Similarly, a question in the 1975 paper concerning the effects of cattle ticks was answered correctly by 35.9%, 33.8% and 23.8% of candidates in the three samples respectively.

Perhaps the most successful item in this respect has been the question concerning the shape of the new moon (page 57 above.) As with the two previous examples, this question gave an advantage to rural as against urban candidates, but in addition it produced a clear bias in favour of pupils from the less-developed rural areas. Details can be seen in Figure 2. In Turkana District, a remote pastoral area in the north-western corner of the country, the proportion answering correctly was as high as 43%. This district was followed by Kilifi (39%), Wajir (39%) and Kwale (38%). These are all predominantly Muslim districts where, of course, the sighting of the new moon signifies the ending of Ramadhan In other pastoral districts, and also the marginal agricultural areas of Eastern Province, the proportion answering correctly varied between 25% and 37%. In the high-potential agricultural areas, running in a belt from Meru District westwards to Lake Victoria, the proportion did not rise above 24%. But performance was poorest of all in the Nairobi high-

cost sample: only 14% answered correctly. The commonest answers were A (37%), and B (39%), which suggests that many of these pupils answered from their reading of bocks published in Europe or America, which show the crescent of the new moon pointing to one side (sometimes, in children's books, embellished with a face), rather than from observation of the new moon as it appears in Kenya, with its horns pointing upwards.

It can be seen from these examples that in some cases the content of a science item can produce a performance bias in favour of rural pupils. However, in the examinations analysed so far, the effects of the content changes have been much weaker than the opposite effects of the skill-level changes. Hence the net effect of the two reforms has been to widen the Nairobi High-Cost (NHC) - Rural Low-Cost (RLC) performance gap. When an item has been based on rural subject-matter, but has involved a higher-level skill such as scientific reasoning, Nairobi high-cost pupils have usually enjoyed a clear advantage. In the reasoning items quoted on page 58 (examples 8 and 9) the performance gaps were 27.5% and 25.2% respectively, despite the fact that both items concerned the yields from different types of hybrid maize, a topic with which the rural pupils were probably more familiar.

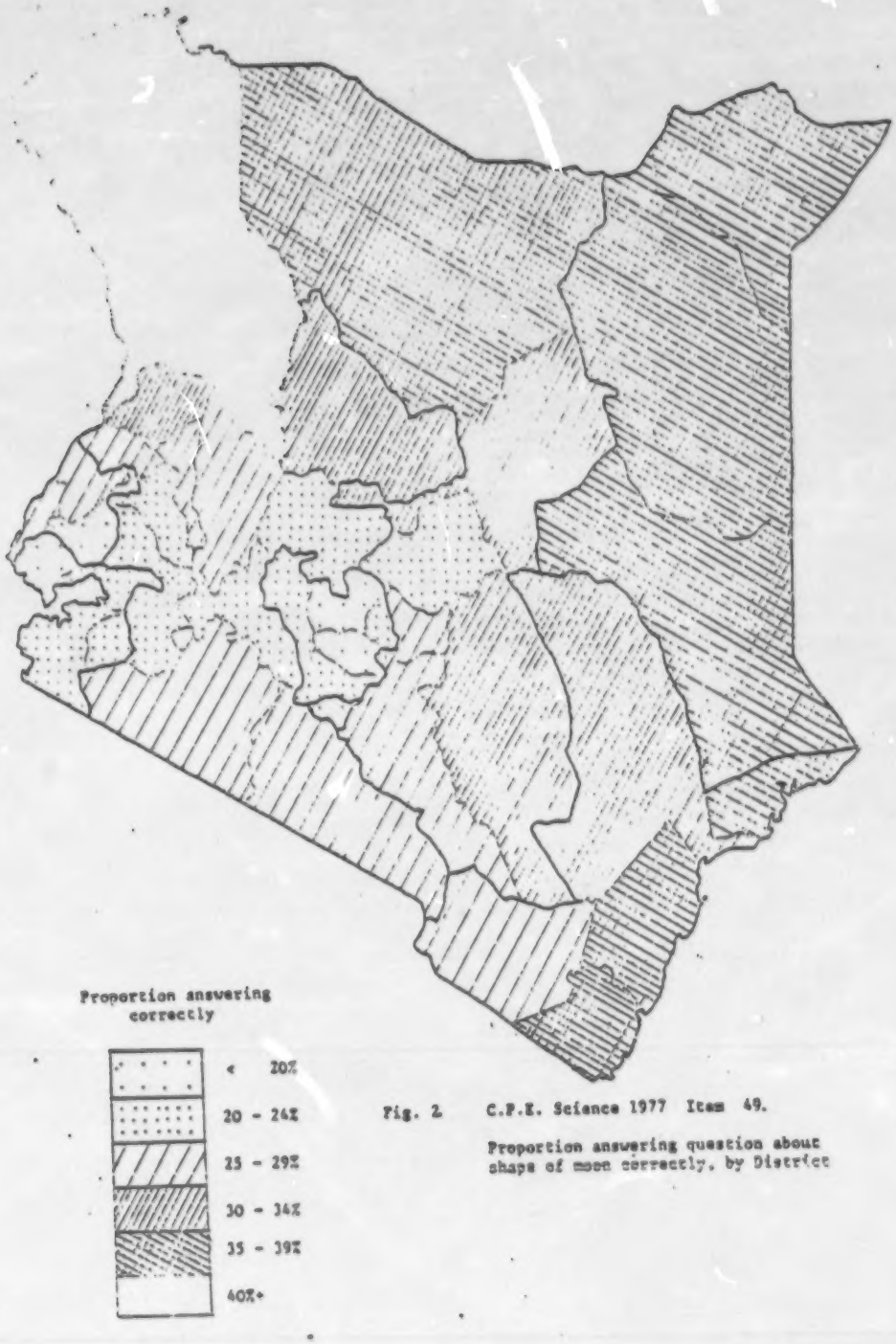


Fig. 2 C.P.E. Science 1977 Item 49.

Proportion answering question about shape of moon correctly, by District

Table 4. CPE English 1973-76: Mean difficulty levels of the various item types in Nairobi high-cost and rural low-cost schools.

Type of item	Number of items	Proportion answering correctly		Performance gap
		Nairobi high-cost	Rural low-cost	
Comprehension				
(a) Fictional passages	33	73.48%	36.79%	36.69%
(b) Descriptive passages	[illegible]	74.03%	42.89%	31.14%
Grammar and syntax	119	84.03%	55.02%	29.01%
Verbal reasoning	39	73.56%	51.25%	22.31%

Table 4 looks at performance in English according to item type. It can be seen that the differences between the Nairobi high-cost and rural low-cost samples are much larger than those for science given in Table 3. This, of course, is what we would expect from the aggregate trends, discussed on page 66.

There is a more important point to be made. The reasoning items in the English and science papers show very similar performance gaps: 22.3% for English, and 20.4% for science. But in science as we have seen, the achievement (non-reasoning) items produce differences which are lower than this level; whereas in English, the achievement items produce differences which are substantially higher. Questions testing knowledge of grammar and syntax, for example, show an average performance gap of 29.0%, and comprehension questions based on fictional passages an average gap of 36.7%. Hence an increase in the proportion of reasoning items in both papers will simultaneously reduce

the advantage of Nairobi high-cost pupils in English, and increase their advantage in science.

We may offer the following interpretation of these results. Far from being relatively immune to the effects of teaching quality, reasoning ability and to some extent other higher-level intellectual skills are particularly prone to such effects. A skilled teacher tries to make facts understandable to his pupils by placing them in a context of cause-and-effect linkages. He also tries to show the pupils how to create these linkages for themselves through reasoning. A pupil who has not received this guidance will be handicapped in answering questions involving higher-level skills, no matter how comptent and conscientious he is at memorisation.

Weak teachers, by contrast, specialise in the teaching of isolated facts. In subjects such as science, history and geography they copy from a textbook onto the blackboard catalogues of names, dates, places and definitions which the children reproduce in their exercise books and learn by heart. Little attempt is made to identify patternings among the facts, or to use the facts to draw inferences.(1)

Until recently, this strategy of memorization worked quite well in these subjects. As we have seen, about three-quarters of the questions asked in science prior to 1974 were pure knowledge items. Moreover, most of pieces of information tested were drawn from a fairly limited pool, whose boundaries were defined by the content of previous CPE papers. The same questions tended to recur year after year, with only slight modifications. A rough count indicates that a candidate who had memorised about 120 to 150 definitions would have been able to answer successfully about three-quarters of the knowledge items involving terminology which appeared in CPE science between 1966 and 1973. For example, the terms "igneous", "metamorphic" and "sedimentary" appeared in questions for three successive years; in one year

(1) In several low-quality schools visited recently, teachers had been drilling pupils in the correct answers to scientific reasoning questions in recent CPE papers, on the grounds that the same question might be asked again!

they were used in both the science and geography papers. Thus a conscientious pupil who learned the answers to all the questions in past papers could be certain of scoring well in CPE science, irrespective of his teacher's ability. This is not true of items testing reasoning ability.

With English, however, the situation is quite different. Preparation which focusses on the content of previous papers is virtually useless. The range of questions that can be asked is much wider than in science, history or geography, so it is rare to find the same or a similar question repeated in more than one paper. But more important than this, real mastery of the usages and idioms of English does not come from formal teaching, but from immersion in an environment where the language is used consistently. Because they use English not only in formal learning situations but also as an everyday means of communication, Nairobi high-cost pupils have a huge advantage. The fact that rural low-cost pupils performed relatively better in the verbal reasoning items than in the English achievement items does not mean that reasoning ability is largely immune to teacher quality effects; it simply indicates that the reasoning items are less heavily dependent on language competence.

The interpretation just suggested depends crucially on the assumption that the differences between the Nairobi high-cost and rural low-cost pupils in verbal and scientific reasoning scores are due to school quality factors, and not to differences in home background or even in inherited potential. To investigate this point, two samples of low-cost schools in one district of Kenya have been drawn, one consisting of 16 schools which performed particularly well in the 1976 CPE and the other of 16 schools which performed badly. All the schools in the sample are day schools. The district chosen is fertile and densely settled, and nearly all families grow either coffee or tea as cash crops. The samples are matched as closely as

possible by geographic location, distance from urban centre, and types of cash-crop grown. Each sample consists of about 10 per cent of all schools in the district. In 1977, the ten schools with the highest 1976 CPE mean scores and the nine with the lowest mean scores were visited, and socio-economic status data obtained from the CPE candidates. For practical reasons, it was not possible to visit all 32 schools. Table 5 shows the occupations of the fathers of the pupils in the two samples, together with comparable data from four Nairobi high-cost schools, obtained in 1978. (See page 75)

It can be seen that the differences between the high-quality and low-quality rural samples are negligible. A few more fathers from the high-quality schools hold or have held white collar jobs, and a few more from the low-quality schools are, or have been, businessmen. But these differences are within the limits of chance variation.

On the other hand, there is a major cleavage between the Nairobi high-cost sample and the two rural samples. No fewer than 76.1% of the NHC fathers are professionals, or in senior managerial positions. The comparable proportions for the rural high quality (RHQ) and rural low quality (RLQ) samples are 0.6% and 0.7% respectively.

Table 5. Father's occupations of CPE candidates in rural high-quality, rural low-quality, and Nairobi high-cost schools.

Father's occupation	Nairobi high-cost		Rural low-cost (a) high-quality		(b) low-quality	
	n	%	n	%	n	%
Professional	43	17.8%	3	0.6%	4	0.7%
Managerial	141	58.3%				
Teaching (primary)	5	2.1%	60	11.3%	54	10.0%
Other sub-professional	3	1.2%	15	2.8%	15	2.8%
Clerical	11	4.5%	26	4.9%	17	3.1%
Total white-collar	203	83.9%	104	19.7%	90	16.7%
Uniformed forces	1	0.4%	26	4.9%	23	4.3%
Skilled workers	5	2.1%	66	12.5%	45	8.3%
Semi-skilled workers	2	0.8%	67	12.7%	84	15.6%
Unskilled workers	0	-	33	6.2%	15	2.8%
Total manual	8	3.3%	192	36.3%	167	30.9%
Business	29	12.0%	68	12.9%	123	22.8%
Farming	2	0.8%	165	31.2%	160	29.6%
TOTAL	242	-	529	-	540	-

Note: Fathers who are now working as farmers but who have previously held jobs or run businesses are classified under their previous occupations. The proportions currently working as farmers are 47.4% in the rural high-quality sample, 49.1% in the rural low-quality sample, and 0.8% in the Nairobi high-cost sample.

Table 6 CPE English 1976: Mean performance in different item types in the Nairobi high-quality, rural high-quality, and rural low-quality samples.

Item type	Number of items	Proportion answering correctly		
		Nairobi high-cost	Rural low-cost (a)high-quality	(b)low-quality
Reasoning				
(a) Letter series	5	89.33%	85.40%	70.57%
(b) Analogies	5	91.72%	87.63%	75.01%
Grammar and syntax	10	85.97%	78.17%	62.6 %
Comprehension:				
(a) Descriptive, harambee project	6	78.78%	72.48%	59.41%
(b) African folk tale	4	87.88%	74.66%	55.06%
(c) Descriptive, Portuguese forts	6	66.89%	52.35%	40.81%

Table 6 shows the average performance of the Nairobi high-cost, rural high-quality, and rural low-quality samples in the different types of items included in the 1976 English paper.

The results are unequivocal: performance in verbal reasoning questions is highly sensitive to the effects of school quality. In the letter-series questions, which require virtually no knowledge of English, rural pupils from high-quality schools scored only 3.9% lower than Nairobi high-cost pupils, despite their socio-economic handicaps. On the other hand, they scored as much as 14.8% higher than rural pupils in low-quality schools, despite their similar backgrounds. Expressed in another way, the quality of the education these rural

pupils had received enabled them to close as much as 79% of the NHC - RLQ performance gap. Similarly in the analogies questions, which require only knowledge of everyday words, RHQ pupils averaged only 4.1% lower than NHC pupils, but 12.6% higher than RLQ pupils. In other words they closed 76% of the NHC - RLQ gap.

But in the English achievement items, especially those involving comprehension, the rural pupils, form high-quality schools were less successful. Many of these questions required a command of the English language which no rural school can provide, no matter how competent its teachers. In general, the performance of RHQ candidates in these sections of the paper fell about midway between that of the NHC and RLQ candidates.

These results suggest strongly that the huge performance advantage enjoyed by Nairobi high-cost pupils in the English paper can be ascribed entirely to two sources: first, the superior quality of the education they receive; and second, their greater familiarity with the language. When rural schools provide high-quality education, pupils close the performance gap on the Nairobi high-cost pupils to the extent that the questions test verbal reasoning ability rather than language competence. There is no evidence whatsoever to suggest that Nairobi high-cost pupils have superior capacity for abstract thought.

D. SOME IMPLICATIONS OF THE RESULTS

When the programme described in this paper was started, one of our major concerns was the low and uneven quality of education offered in Kenya's primary schools. Each year the secondary school recruitment lists are dominated by candidates from a few primary schools in each district. It is not uncommon to find one primary school sending more than half its CPE candidates to government secondary schools,

while adjacent schools, drawing on pupils from very similar backgrounds, send few or none. Reasoning questions, it seemed, might help to reduce these discrepancies. We shared the commonly-held view that such questions were less vulnerable to the effects of environmental factors than conventional attainment questions, and so could enable us to identify pupils of high potential who had been badly taught.

The data discussed in the previous section, however, have forced us to revise our views. Reasoning questions in the English paper do help to reduce the discrepancies, because they are less dependent on language competence. But in science and geography, reasoning items are more affected by teacher quality than content questions.

If our only concern was to make secondary school access more equitable, the implications of our findings would be clear. Reasoning items should be retained in the English paper, but in other subjects they should be eliminated, together with questions testing other higher-level skills. The CPE papers in history, geography and science would consist entirely of knowledge items, each testing an isolated fact - the name of a town or river, the year in which an historical event took place, the definition of a scientific term.

But this would be no solution. Education which fragments knowledge into isolated packages is no education at all. On the contrary, education must be concerned with connections and patternings, causes and consequences. If it is not, it provides the learner with no guide to action. A farmer, for example, may know the scientific names of all the major plant nutrients, but this information by itself will not help him decide how to increase his farm earnings. To do this, he must be able to gather, sift, and organise a wide range of data: the suitability of different parts of his farm for various crops, the costs of fertilisers and other inputs, market prices, and the like.

The argument for testing reasoning skill in CPE has nothing to do with equity in secondary-school access. It is simply this: the ability to think effectively is the most important skill of all, both for the secondary school entrant and the primary school leaver. Moreover, it is a skill that is teachable.

If we want a primary school education which is both relevant and equitable, there is no escaping the problem of quality. The core subjects and the core skills must be taught much more effectively than they are at present. But as we have seen, the recent proposals for primary school reform have focussed on extending the duration of the cycle, and on adding new, pre-vocational subjects to the curriculum. These proposals have become the centre for public debate, and have thus diverted attention from the key issue.

CHAPTER IV

INTERNATIONAL STUDY OF THE RETENTION OF LITERACY AND NUMERACY: THE EGYPT CASE STUDY

World Bank

Objectives

The primary objective of the study is to throw light on the question of how much of the basic skills (literacy and numeracy) learnt in primary school are retained by students, a key issue for developing countries spending a high percentage of their income on first-level education. It is hypothesized that the degree of retention of such skills is closely linked with the amount of schooling, while being conditioned by students' home background and individual characteristics such as intelligence. It is further hypothesized that for individuals and groups of students there is a "threshold" level, in terms of amount of schooling and achievement levels attained, beyond which there is either enhancement or minimal erosion of the acquired skills. Even an approximate location of such thresholds for groups is of great importance to educational policy-makers in that it gives guidance on the fundamental question of how much schooling a country must program for its primary school students so that they reach the levels of skill acquisition and retention deemed necessary, in the country in question for students to operate in later life as effective citizens. In addition to providing policy guidance

on the amount of schooling to provide, the project will establish (for the first time in Egypt) a picture of achievement levels of students in school at different grade levels and information about the influence of schooling variables (teacher attitudes, curriculum, etc.) on performance of students.

Strategy

The strategy is twofold. First, in order to assess the degree of retention among students with different amounts of schooling, it is necessary to locate and test school learners who:

(i) left school at different points (from grades three, four, five and six) and

(ii) have been out of school for differing periods (one, two, three and four years). In this connection it is hypothesized that, under the threshold, retention erodes rapidly.

Evidently, school leavers often differ from students who remain in school but by collecting information about their intelligence, socio-economic background and post-school experience, it is possible to control for these differences and compare them with students in school with similar amounts of schooling. Thus, by examining what happens to retention in groups of third graders, for example, who have been out of school for differing lengths of time, the question of what would be likely to happen to the skills of typical third graders (were they to leave school) can be answered (answered, it is important to emphasize, not for each individual but for groups of students with similar characteristics). Since few school systems in the world, if any, can provide individualized instruction, the question of what occurs in the case of groups of students is sufficient for policy-making. Second, in the interest of avoiding a follow-up of individual students over time, the project proposes to study a cross-section of school leavers. Specifically, leavers from

grades 3, 4, 5 and 6 would be randomly selected from lists provided by primary schools (also randomly selected) and their degree of retention of basic skills studied together with their individual and socio-economic characteristics. The retention of these leavers would serve as an indication, expressed in terms of group means, of what would occur in the case of a cohort of leavers followed over time. This approach is less costly and more implementable than a longitudinal study. Nevertheless, the Bank's partner in the research, the National Center for Educational Research (NCER), would carry out a variety of follow-up studies using the valuable benchmark data collected on students, school leavers and schools.

Organization and Implementation

Stage I of the Project was completed on schedule. It focussed on the design and development of the necessary instruments, on building a field survey capability at the NCER and on programming the main survey (Stage II). The NCER with Bank assistance, also successfully carried out field-testing and refinement of the instruments. Stage II of the study is structured as follows:

- a survey of sixty schools and related leavers (from grades 3, 4, 5, and 6). Some 4,000 students would be tested in reading, writing and arithmetic to establish nationally applicable norms to serve as a benchmark against which to compare the retention of those who have left school and 2,000 + leavers (sufficient to have adequate numbers of girls and boys from urban and rural schools) would be tested and interviewed (to get a better picture of post-school influences on retention).
- a second field survey in successive samples within a frame of 300 randomly selected schools would try to get a better picture of the influence of school-related variables (which educational policy could modify) on retention.

Both surveys would be completed by Fall 1979. The higher costs associated with the initial 60 school survey represent the fixed costs of staff training and technical assistance. In the second stage, a survey management unit would be created to train and supervise the data collection teams responsible for testing students and leavers and inventorying school and socio-economic data. Data analysis would be handled by the Bank, with active involvement of the NCER, and the findings presented in a workshop in Egypt for senior policy-makers and planners.

Follow-up

In parallel, other agencies of the Bellagio Group are likely to implement country case studies under the coordination of an international unit (either IDRC or UNESCO). The choice of country would be a function, as in Egypt, of country interest in improving their basic education programs and of the existence of viable research institutions which such a study would help develop. The end product of these studies would be an international cross-comparison of findings (Stage III) which should provide a better picture of inter-cultural differences in basic education requirements.

RESOURCE REQUIREMENTS

Part I (1) gives the financial requirements for the study, and Part II (2) indicates the Bank staff and consultant requirements.

Within the Bank, the principal investigators will be:

M. Wodajo, Senior Education Specialist, Central Projects (Education)

S. Heyneman, Education Specialist, Central Projects (Education)

M.J. Wilson, Senior Education Specialist,*TASS Division, **EMENA Projects

E.A. Abdel-Mawgood, Education Specialist, TASS Division, EMENA Projects

* Technical Assistance and Special Studies

** Europe, Middle East and North Africa

Consultants 1/ to the Bank will be:

Dr. J. Reed, Sociologist, University of North Carolina

Dr. J. Keeves, Educational Researcher and Director, Australian Center for Education Research, Victoria 2/

Professor Cyril Hoyt, Statistician and Educational Researcher, University of Minnesota

Dr. Ingvar Werdelin, Professor of Education, University of Linkoping, Sweden

Dr. Hamed Ammar, Sociologist, ECWA, Beirut 3/

In Egypt, the principal investigator will be:

Dr. Youssef Khalil Youssef, Director of the NCER.

Dr. Abdel Aziz El Kousy, Psychologist

1/ Drs. J. Reed and H. Hyman, (co-authors with Dr. C. Wright of The Enduring Effects of Schooling, University of Chicago Press, 1975) are also advising the staff in the preparation phase of the proposal.

2/ Dr. Keeves worked closely with Professor Torsten Husen in the international study of achievement in Mathematics.

3/ Dr. Ammar is author of Growing Up in an Egyptian Village, London, 1954.

BACKGROUND OF THE STUDY

1. On May 12, 1977, the Education Department CPS and the TASS Division of the EMENA Region submitted a proposal for a multi-stage cross-sectional study aiming at testing a widely held, though unverified hypothesis among education authorities in LDCs, namely that:

a. there exists a basic threshold level, beyond which school leavers will retain their basic literacy 1/ skills almost unimpaired; and

b. that this threshold is at the completion of fourth grade of primary education.

2. Exploring this subject with respect to various cultural, socio-economic and pedagogical variables would add substantially to our knowledge of the obstacles to achieving literacy in LDC's and would have significant policy implications for (i) the desirable length of compulsory education; and (ii) the application/administration of automatic promotion policy. The research could also provide some insights relevant to other areas of concern, including: (i) the structure and format of basic education; (ii) the design of primary education curricula; (iii) the design of adult education/training programs; and (iv) the design of programs that affect socio-economic variables that have a bearing on the retention of skills among school leavers.

1/ Henceforth literacy will also include numeracy unless explicitly otherwise stated.

3. No such study had yet been undertaken, though partial evidence 1/ seemed to cast doubts about the validity of the widely held hypothesis. The study was to proceed in three stages:

(i) Stage I: Review of the literature and elaboration of a suitable format for a pilot case study (Diagram 1, page 88).

(ii) Stage II: A series of in-depth country studies, one of which (Egypt) would be financed by the Bank under the present proposal. Other studies would be financed by other agencies or by countries and would be selected from various regions of the world (Diagram 4, page 104).

(iii) Stage III: An international comparative analysis drawing upon the results of Stage II and aiming at meaningful, generally applicable, conclusions (Diagram 5, page 112).

1/ In his paper "Retention of Cognitive Skills Acquired in Primary Education" (Comparative Education Review, 20:1, Feb. 76), Simmons identifies six studies as the basic literature on retention:

1 - A.L. Tibawi, Arab Education in Mandatory Palestine: A Study of Three Decades of British Administration (London: Luzac and Company Ltd., 1956)
2 - D.R. Gadgil, "Report of Investigation into the Problem of Lapse into Illiteracy in the Satara District", in Primary Education in Satara District: Reports of Two Investigations (Poona: Gokhale Institute of Politics and Economics, 1955).
3 - Greenleigh Associates, Inc., Participants in the Field Test of Four Adult Basic Education Systems: Follow-up Study (New York: Mimeco, Jan. 1968).
4 - G.A. Smith, A Micro-Study of Rural Illiteracy in the Tribal Trust Lands of Rhodesia: Evaluation of Chiduku Literacy Project
5 - J.M. Kapoor and Prodipto Roy, Retention of Literacy (New Delhi: Council for Social Development, 1970).
6 - John Simmons and James Allman, "Education des adultes et niveau d'alphabétisation dans un village Tunisien," in Revue Tunisienne de Science Sociales, Mai, 1973.

4. The research committee of the World Bank approved the proposal in principale and funded Stage I. The country selected for the first pilot case study (the one to be funded by the Bank under Stage II) was Egypt. 1/ Stage I was successfully completed and a completion report was issued May 31, 1978. Diagram 1 below gives an overview of the main activities.

1/ The reasons for selecting Egypt derived primarily from the familiarity of some of the key investigators with that country and because it would enable the Bank to relate this to its efforts in other Arab countries. Also, Egypt is probably the best place in the Arab would to execute this study because:

(i) Egypt is the only Arab country that has sufficiently large numbers of school leavers of every type to make the (relatively) inexpensive accumulation of a sample of this size feasible;

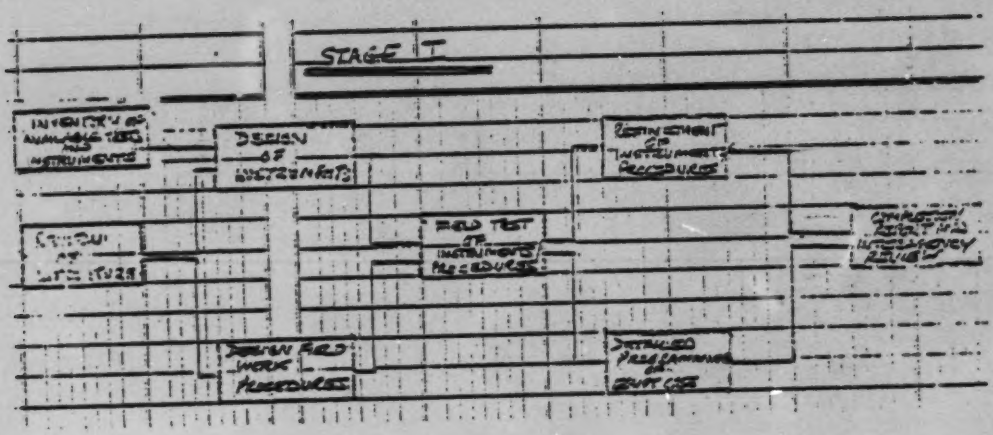
(ii) Rural Egyptians tend to be immobile, and finding school leavers after two or three years will not be as difficult as it could be elsewhere;

(iii) School attendance records are usually well kept in Egypt (because of certain governmental regulations);

(iv) The recruitment of large numbers of qualified testers, relatively inexpensively, is easier in Egypt than anywhere else in the Arab world; and

(v) Egypt has the oldest Arab education system and one which still influences that of many other Arab countries. Hence, findings which might lead to structural, curricular or administrative modification could eventually have far-reaching beneficial effects.

PHASE 1



The principal outputs of Stage I were:

(i) Determination, via a field-test that such a study is feasible in the Egyptian context (most importantly it was possible to track school leavers a number of years after they have left school);

(ii) enlistment and consolidation of the full support of the Egyptian authorities for the execution of this research and mobilization of the manpower required to execute Stage II. The local research institution is the Ministry of Education's National Center for Education Research (NCER);

(iii) programming of the specific activities of the survey to be implemented in Stage II; and

(iv) development and refinement of the instruments to be used in Stage II in addition to technical reports 1/, instruments and survey procedures.

1/ Reports and papers issued under Stage I include:

(i) James R. Sheffield, Retention of Literacy and Basic Skills: A Review of the Literature, June 1977

(ii) Ingvar Werdelin, A Proposed Outline for an International Study of Retention of Basic Skills Among School Leavers, September 1977

(iii) Sayed Kheirallah, An Inventory and Evaluation of Intelligence and Achievement Tests in Arabic Available in Egypt, Cairo, March 1978

(iv) World Bank/NCER, The Retention of Basic Skills Among School Leavers, A Preliminary Report, Cairo, February 1978

(v) World Bank/NCER, Socio-Economic and School Factors Influencing Success and Failure in Elementary Schools in Egypt, Cairo, March 1978

(vi) The Completion Report, including a statisitical analysis of the test and interview results, May 1978

(vii) The Proposed Research Instruments

5. A plenary meeting of representatives of the Bellagio Group agencies 1/ was held at the Bank on July 17, 1978. The results of Stage I were reviewed and the proposed format of the Stage II study was discussed. The participants were enthusiastic about this work. A further meeting of the Group is expected to take place in Geneva on November 22-25. At this meeting, case study countries will be selected and a small technical and administrative group would be established to provide technical coordination of Stage II case studies and to provide guidelines for data collection designed to facilitate the comparative studies to be undertaken in Stage III which will be discussed at the meeting. Both UNESCO and IDRC have expressed interest in this coordinating role.

6. This proposal is to cover Stage II of this study: the execution of a detailed case study in Egypt.

1/ Agencies represented, many of whom have expressed willingness to participate in funding or executing a similar case study later on, included: CIDA, IDRC (Canada), USAID, UNESCO, and the Rockefeller Foundation. The Ford Foundation and SIDA (Sweden) have also expressed interest in financing country case studies.

OBJECTIVES AND STRATEGY

1. The primary objectives of this study are, in order of importance, as follows:

(i) to test whether a "threshold" level of schooling exists, and if so, at what level of schooling it exists in Egypt today;

(ii) to identify the key variables that affect the ability of school leavers to retain their literacy skills; and

(iii) to obtain insights into related policy areas which could be refined by further, independent studies.

Definitions:

2. To clarify these objectives, a number of definitions are in order:

Literacy/Numeracy Skills: include a number of basic skills (vocabulary, spelling and written expression; oral reading and silent reading comprehension; and arithmetic skills). In the study, each of these skills would be measured separately for each individual via tests standardized on the performance of students in school. The resulting scores would be compared on a continuous scale. Groups of, or all of these skills (in the form of scores) could also be combined, appropriately weighted, to construct an index (or indices) of literacy or numeracy.

Retention of Skills: would be defined in terms of the degree of skills retained by a school leaver after a number of years out of school. It would be measured by the performance of school leavers on the above tests, standardized on the performance of individuals in school who had completed the same number of school years.

Threshold Level: would be defined as the number of years of primary schooling under a given set of schooling conditions) which are required for the majority (or x%) of school leavers to perform to and retain a pre-specified minimum of performance.

Policy Variables: for purpose of this study, the principal policy variables are schooling variables relating to the organization and process of education and include:

- teacher characteristics (training, years of service, geographic origin, attitudes toward students);
- school characteristics (whether single or double shift; average class size; level of equipment and physical aspects);
- "process" variables such as student/teacher interaction in the classroom. 1/

Exogenous Variables: these would relate essentially to individual and environmental characteristics and would include:

- age, sex, and verbal and non-verbal intelligence, urban or rural origin, together with indicators of post-educational experience;
- indicators of socio-economic status (living conditions, family size, educational level of parents and availability of reading materials).

It will be important, for the purpose of statistical analysis, to reduce these variables to a minimum by combining them in the form of meaningful indices wherever possible. It is not possible, however, to specify, at present, the particular indices which would be constructed and employed.

Strategy:

3. Longitudinal vs. Cross-Sectional designs: choice of an appropriate research design is fundamental to the successful implementation of the proposed research. The relative advantages

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1/ While the curriculum is common to all schools in the study, an ancillary study (planned by The National Center for Educational Research) would examine the emphases and content of the curriculum relating to literacy and numeracy in the light of the instructional objectives and the performance of students. Reading difficulties would be given special attention.

of the different designs is reviewed elsewhere. To examine retention as an individual phenomenon, an experimental "test-retest", longitudinal approach would be required. 1/ Ideally, the researcher would try to identify former students who, as typical as possible of the in-school population in terms of individual and social characteristics had nevertheless been unable for one reason or another to continue their schooling (lack of a place in school, or parental inability to finance their education) and had left after different periods of instruction (after grades three, four, five and six). These individuals would then be tested at regular intervals (after one, two or more years out of school) to ascertain their degree of retention of the skills as measured by achievement tests standardized for the different grades in-school students. This successive testing would necessarily require regular updating of the test norms on the in-school population. Further, any changes in intelligence, as measured by intelligence tests, would have to be monitored, given the potential influence of intelligence on achievement. The resulting data would permit the plotting of individual curves of retention as measured by standardized tests.

4. There are certain advantages to using a "test-retest" longitudinal design: the statistical techniques are well developed and the analysis of individual data relative to loss of retention could lend to a better understanding of the phenomenon of retention. However, in practice, longitudinal studies are costly and confront many practical difficulties including loss of interest and support due to long duration. Also, repeated testing can lead to test reaction (due to subjects learning by taking the tests and improving their performance) and to variation in the procedures for test administration.

1/ D. T. Campbell and J. C. Stanley, "Experimental and Quasi-Experimental Designs for Research on Teaching", in N. L. Gage, Editor, Handbook of Research on Teaching, American Educational Research Association Chicago, Rand McNally, 1963.

Furthermore, in a study of out-of-school youth, it will be increasingly difficult to contact individuals and an initial sample is likely to incur significant shrinkage in numbers. At the same time the sample will become increasingly self-selected in that subjects either avoid re-testing because of failure or return for testing due to other reasons such as interest or remuneration. All these factors can lead to serious contamination of the data. In a developing country, other difficulties are likely to appear: for example, impatience on the part of political authorities, and inability to mount a sustained research effort because of the lack of well established research institutions.

5. Cross-sectional design: this study--as agreed by the Research Committee in approving Stage I (the design and development of instruments)--seeks to proceed cross-sectionally. Youths who left school after different periods of instruction (after grades 3, 4, 5, 6) who have been out of school for one to three years are used as proxies for individuals who, tested at a given point in time, would have been followed up through successive testing in a longitudinal study. This approach makes the following assumptions:

(i) few changes have occurred in the socio-economical environment of school leavers in the last few years and there has been little influence (from job experience or additional schooling) that would have enhanced retention.

(ii) schooling variables were not significantly different for school leavers of one to three years ago, than they are now;

(iii) when loss of skills occurs it will be apparent in the first few years after leaving school.

(iv) that comparability between groups is possible with appropriate statistical techniques.

Item (i) is a defensible position since there are few attractive possibilities for work or opportunities for further education available to primary school leavers. However, in interviewing leavers they will be asked about any such experiences. Relative to (ii), changes in the education system in most countries tend to be very slow except in the cases of major educational reform or revolution. In Egypt, there have been very few changes in the curriculum (which is applied nation-wide) and little variation in the quality of teachers or in access to school places between communities and over the last five years or so. With regard to (iii), the research literature does seem to support the idea of a rapid fall-off in retention even in the first year out-of-school. Assumption (iv) is one shared by all cross-sectional studies in educational research.

Proposal

6. The procedure to be used would be to identify school leavers, randomly selected from among the population of leavers of some sixty schools, and to administer a battery of standardized achievement tests, as well as other instruments to assess personal and background characteristics. By identifying school leavers by numbers of years out of school and by highest grade completed (while controlling for selected schooling, socio-economic environmental variables) the results of the analysis could than be graphed in a pattern of curves as shown in the attached Diagram 2. The "threshold" level would be given by the slopes of the curves. In the Hypothetical Series graphed in Diagram 2 the threshold lies at the completion of grade five. Curves could then be constructed for the scores of specific skills (such as arithmetic or reading comprehension) as well as for an aggregate index of performance. The selection of one or more "acceptable level of literacy" would also highlight different policy

implications. For example if it was found that fourth grade school leavers (two years out of school) retained basic reading and writing skills but that only sixth grade leavers were able to read newspapers, this finding would clarify the options for policy makers. It would also be of interest to note which skills were retained longest (or were least impaired) and what the impact of environmental, socio-economic or other factors of reinforcement were. The proposed intelligence tests should also produce some interesting correlations.

Importance of the Study for Educational Policy

7. The cross-sectional approach, while it will not throw light on retention as an individual phenomenon, will still enable:

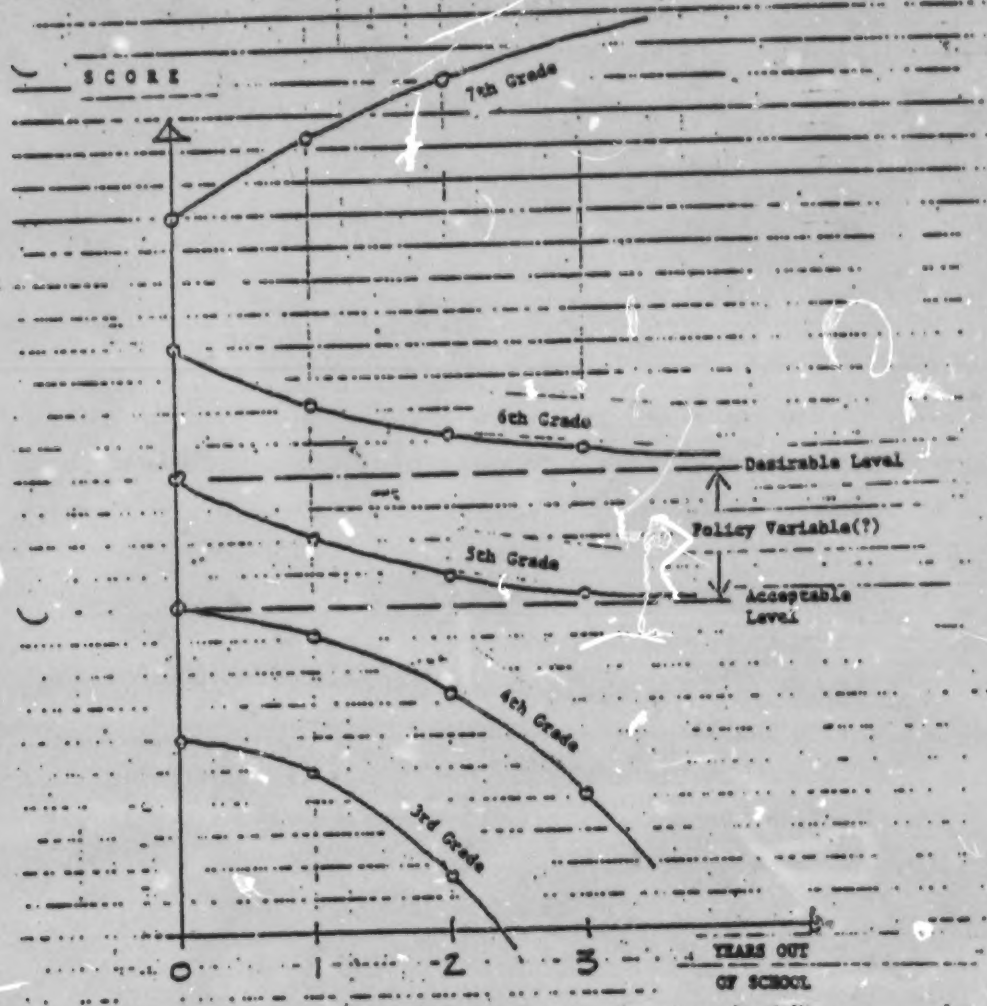
(i) the identification of changes in the retention of groups of school leavers;

(ii) the identification of types of individuals (for example: rural girls or students with a negative self-image and low S.E.S.) for whom retention shows improvement or loss; and

(iii) the study of factors which lead to those changes.

The resulting information would assist education decision-makers significantly in locating, if not explaining, problems related to the impact of primary school instruction on different population groups and would point the way to modifications in schooling variables such as, for example, the design of programmed interventions to improve instructional materials or teacher effectiveness. By providing standardized achievement tests and reliable intelligence tests for the Egyptian primary school, the project is already providing administrators with a new and valuable tool for assessing and monitoring student performance.

DIAGRAM 2 - HYPOTHETICAL CURVES PLOTTING TEST RESULTS AGAINST YEARS OUT OF SCHOOL



8. Possible follow-up studies: the use of a cross-sectional approach in the present proposal would by no means preclude eventual follow-up studies one or more years later, perhaps on a small sub-sample of leavers by the National Center for Educational Research which, it is hoped, would be significantly strengthened through its participation in the present study. At that point better information, generated by the project, would be available on the relative importance of variables and some "streamlining" of the procedures would be possible. The proposed project would explore this possibility with the local authorities and assist them in planning for such an eventuality.

Data Collection

9. The study envisages the collection and analysis of information on three clusters of variables. These can be grouped into three sub-studies:

(i) a study of achievement in school and the factors affecting it;

(ii) a study of the achievement levels of school leavers (from various grades) at various intervals after leaving school;

(iii) a study of characteristics of students in school and school leavers. 1/

The relationship between these proposed analyses and the ultimate objectives of the study is as follows:

(i) is to establish for each school the actual level of achievement attained by each grade. This information is needed for two reasons. The first is to establish how many years of education are needed to bring students

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1/ The study is interested in the characteristics of these school leavers only in so far as it is necessary to control for these in any comparison with students in school.

in school up to and beyond nationally defined acceptable levels of basic skills; the second is to provide benchmark (in the form of end-of-grade performance on achievement tests) against which the retention of skills by school leavers can be assessed;

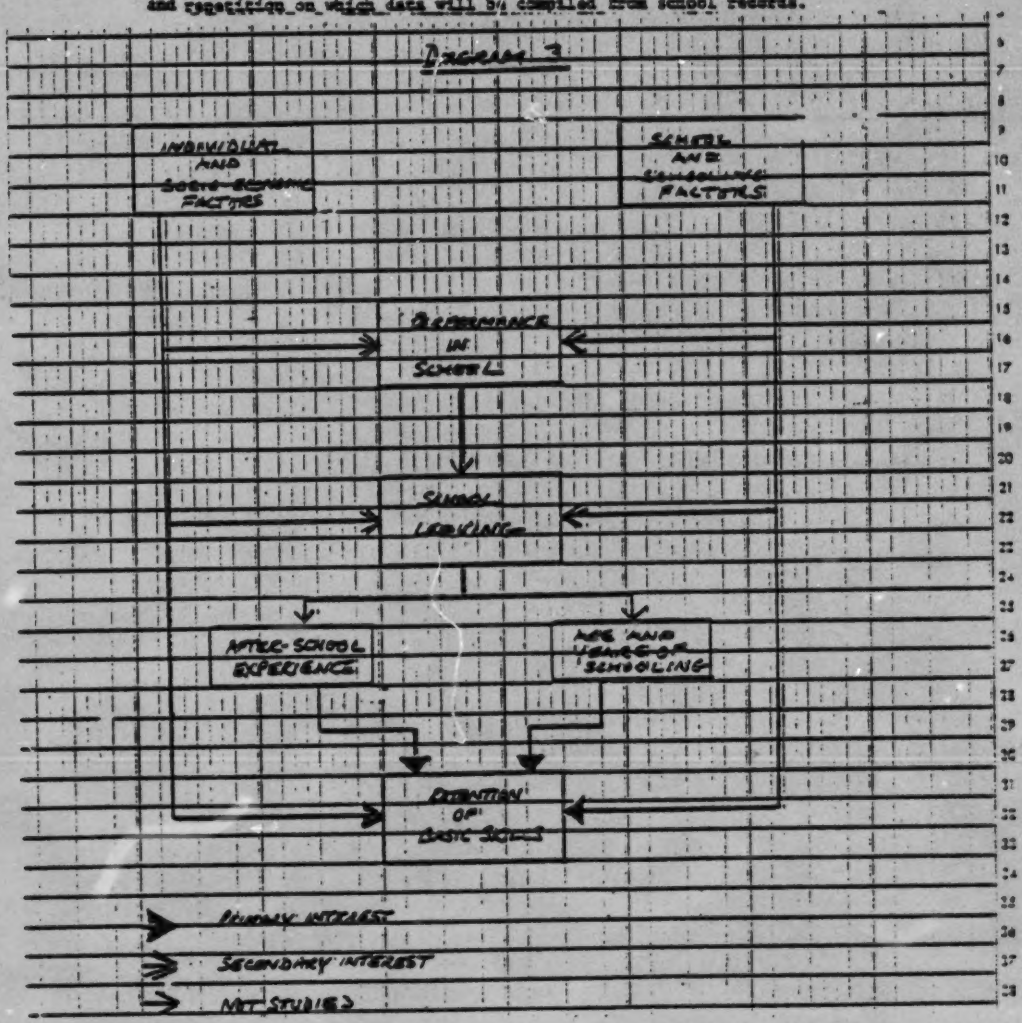
(ii) is required because school leavers represent the only accessible group of children whose primary education has been terminated before completion of primary school (and not because of interest in them as school leavers);

(iii) is needed in order to generalize from the sample of school leavers to the school population at large.

10. A simple model of the relationship between the variables and retention is shown in the following figure. Only main groups of variables are shown. Arrows indicate prediction of a dependent variable on the basis of a set of predictors. "Solid" arrows indicate where our main research efforts will be made. The term "school leaving" covers absenteeism and repetition on which data will be compiled from school records.

(iii) is needed in order to generalize from the sample of school leavers to the school population at large.

6.10 A simple model of the relationship between the variables and retention is shown in the following figure. Only main groups of variables are shown. Arrows indicate prediction of a dependent variable on the basis of a set of predictors. "Solid" arrows indicate where our main research efforts will be made. The term "school leaving" covers absenteeism and repetition on which data will be compiled from school records.



Reduction of Data

11. It will be important to reduce the number of variables, particularly socio-economic and schooling variables, to prevent the analysis from becoming unwieldy. An important task facing the project will be to design composite indices which can act in the analysis for sub-groups of related variables. A priori, it is not possible to spell out what these indices will be but the extensive literature developed by other cross-sectional studies such as the Coleman Report 1/ and the international achievement study should provide useful guidelines. 2/

1/ J. S. Coleman, et al., Equality of Educational Opportunity, Washington, D.C., U.S. Department of Health, Education and Welfare, Office of Education 1966.

2/ Torsten Husen (Ed.) International Study of Achievement in Mathematics, A Comparison of Twelve Countries, New York, J. Wiley, 1967.

DESIGN OF THE STUDY

Analytical Framework

1. As indicated in page 91 above, the objectives of the study are to find whether "threshold" levels of schooling exist (it is hypothesized they will be different for different groups of students) and to identify variables (individual, schooling and environmental) which influence retention in groups of students negatively or positively. From this analysis it is hoped that insights for future policy-making will be gained. The table below indicates the major questions asked by the study, the variables involved and the techniques which seem to be indicated.

2. One interesting approach suggested by reviewers which will be given consideration would be the combination of all the independent variables (indices of SES, personal characteristics, schooling) in a "giant" regression formula which would permit a better understanding of the interplay of these factors relative to the prediction of the dependent variables, the mean achievement scores of different groups. Such an analysis might be made of mean scores in specific skill areas such as reading comprehension. This approach is implied in question 4 of Table 1.

Data Analysis

3. The prior choice of technique is difficult in the sense that data, once collected, may not permit the use of a given technique. At the same time, the researcher does not wish to limit his tools unnecessarily. However, it is useful to bear certain techniques in

PRINCIPAL QUESTIONS FOR INVESTIGATION

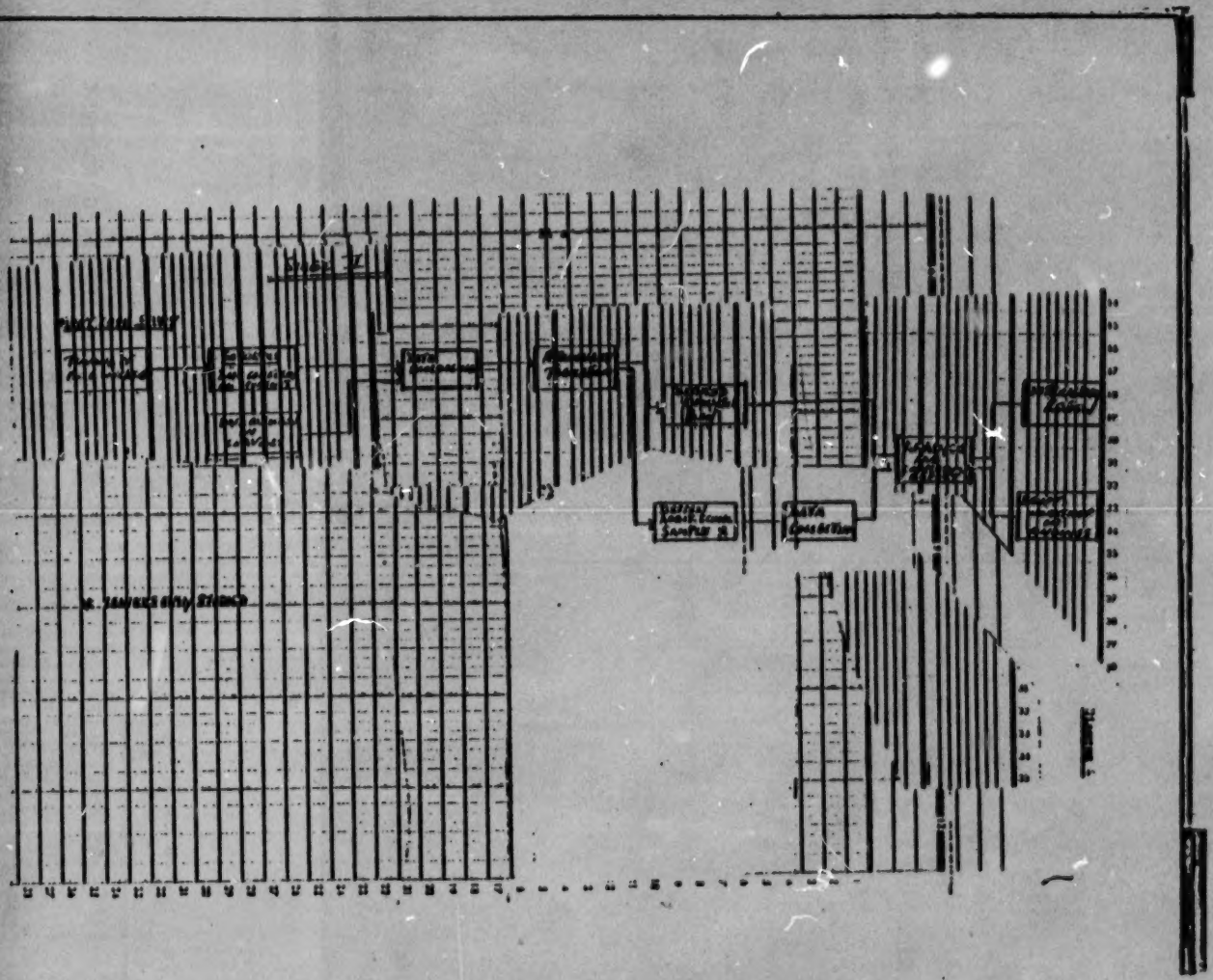
	Achievement and Retention	Dependent Variable(s)	Independent Variable(s)	Technique of Analysis
1.	What is the impact of amount schooling on Achievement (A) and Retention (R)	A & R	amount of schooling in years	analysis of variance
2.	What is the impact of time Lapse on R?	A	time lapse (years out of school)	ANOVA and regression
3.	Which Literacy/Numeracy skill has the highest or lowest A&R?	highest or lowest A&R	Literacy and numeracy scores referred to the norms	canonical correlation
4.	What variables best predict the student A & R? 1/	A & R	individual, multiple schooling and environmental variables	regression
5.	Which of the specific literacy numeracy skills are most affected by the amount of schooling?	Literacy/ Numeracy skills	amount of schooling	analysis of variance
6.	Which cluster of variables (i.e. individual vs schooling vs environment) best predict the amount of loss of knowledge among school leavers?	scores on literacy/ numeracy tests of school leavers	clusters of variables	canonical correlation or step-wise or multiple-related regression
	Impact of Individual Characteristics			
7.	What is the impact of individual characteristics on A & R and which factor best predicts scores?	A & R	individual characteristics (age, IQ, self-concept)	multiple regression
8.	Which of the individual characteristics best predict specific sub-scores of A&R?	A & R	individual characteristics	multiple regression
9.	What is the impact of "self-concept" on leaving schools?	leaving school	self-concept score	analysis of variance
	Impact of Socio-Economic Characteristics			
10.	What is the impact of socio-economic characteristics on A & R?	A & R	socio-economic characteristics	analysis of co-variance
11.	Which of the socio-economic factors best predicts A & R?	A & R	socio-economic factors	regression
12.	Which of the specific literacy/numeracy skills is affected most by the socio-economic variables?	literacy/ numeracy skills	socio-economic variables	multiple correlation
	Impact of Schooling Variables			
13.	What is the impact of certain teaching methods on A & R?	A & R	teaching methods	analysis of variance
14.	What is the impact of teacher interpretation of curriculum objectives on A & R?	A & R	curriculum objectives as viewed by the teacher school	analysis of variance
15.	What is the impact of school characteristics (measured by a scale) on A & R	A & R	school characteristics	analysis of co-variance
16.	Which clusters of schooling factors predict best the A & R?	A & R	clusters of variables	multiple regression
17.	Which of the literacy/ numeracy skills is affected most by the schooling variables?	literacy/ numeracy skills	schooling variables	analysis of variance

1/ This analysis might come at an early stage in which case as many factors as possible would be imbedded in the formula. Alternatively, it could be carried out after reduction when the most significant variables from difference categories could be combined.

mind. This at least ensures that data are collected wherever possible in an appropriate form. The project would seek the advice and assistance, on a continuing basis, of knowledgeable statisticians both in the Bank and among those who have worked extensively with cross-sectional data.

4. Means, standard deviations and distribution, etc. would be found for all tests and the items of the instruments. This data would be compared with norms found for students in school, wherever relevant. Individual scores will be in percentile form which will enable more accurate location of subject's individual scores on the norms. Treatment of interview response data from pupils and teachers would be "scored" in a manner similar to adding the number of correct responses given by a pupil on a test to arrive at composite scores. There are several ways that descriptive reports can be "scored" so that we obtain a score on each form for each respondent. The procedure we expect to use in these instruments in reciprocal averages. 1/

1/ It is essentially one of determining the principal component in a response. This procedure maximized the internal consistency, reliability and coefficients of the scores obtained. Several computer programs are available for such scoring and they yield, in quantitative terms, such measures as student attitudes, home conditions or any other factors about which a number of responses have been collected.



Principal Research Activities

5. As described in para. 5, page 94, the study will employ a cross-sectional design. A random sample of some 60 primary schools altogether has been drawn and the batteries of tests (achievement and intelligence, para 10 - 14 below), would first be standardized on the basis of students in grades 3, 4, 5 and 6 of these schools (a total of about 4,000 students). This first activity would provide nationally applicable test norms which would serve as the benchmarks against which the performance of school leavers from these grades would be compared. In parallel to test administration in the 60 schools, the field workers would compile from school records the names of school leavers (both over a period of three years) together with personal data (parental information, teacher comments, etc.) and schooling data (absenteeism, repetition, grades). From these lists random samples of leavers from grades 3, 4, 5 and 6 from one to three years before would be drawn for follow-up and testing by the field workers. It is anticipated that about 1,600 school leavers would be tested and interviewed. The possibility of additional interviewing ("oversampling") has been raised by at least one of our commentators and this would be envisaged in order to be able to focus on specific categories of leavers (in particular those with significant post-school experience which might have influenced retention). Field workers would also complete survey forms relative to school characteristics (class size, teacher qualifications and experience, teacher origins, quality of facilities, whether double or single shift, etc.)

6. In order to isolate the impact of schooling variables it is likely that a larger number than 60 schools would be required. The reason for this is that many students have the same "score" in terms of some variables for example, in terms of the impact of whether a

school is double shift or single, this variable is the same in regard to all the students.

7. It is planned to establish a random sample of 300 schools which would be successively sampled. Both the number of additional schools to be sampled and the sample design would depend on the findings of the analysis of the 60 school data in terms of the ability of schooling variables to predict dependent variables (achievement and retention) of interest to the researcher. If appropriate principles of stratification become apparent it would also be possible to proceed via a stratified sample.

8. In the in-depth study of schooling variables at the end of the 1978/79 school year only recent school leavers from grade 4 and those one year and more away from school would be studied. Grade 4 has been chosen because this is the highest self-contained grade in the Egyptian primary school: that is, there is only a general curriculum, no specialized instruction and only one teacher per class. The 4th grade is also of special interest because there is a national examination, to provide a checkpoint on student achievement. Also, Grade 4 is one of the three grades where repetition is allowed under current regulations. In addition, most Arab educators consider completion of the 4th grade as synonymous with "acceptable literacy" (an assumption which will be empirically tested by this research). Grade 4 enrollments of 300 schools would yield about 1200 leavers in the period previously. Depending on the contacts established with leavers and their number during the period, it might be necessary to look at leavers who had been out of school even longer.

Tests and Instruments

9. The selection, design and development of instruments was an important part of the planning of the study. Since there has been

little recent field research experience in Egypt, many of the instruments had to be constructed from scratch. Existing instruments were either ill adapted to the existing situation or outdated. The tests were tried out in several schools, and item analysis performed to enable their refinement.

Literacy Tests

10. There are four reading and writing skills tests:

(i) a simple reading test to be used with grades 3 - 5 and all dropouts, containing the following sub-tests: Word Comprehension (5 items); Word Identification (5 items); Sentence Comprehension (5 items); Sentence Completion (5 items); and Paragraph Understanding (10 items);

(ii) a difficult reading test for grades 5 - 6 and the most able dropouts consisting of the following parts: Sentence Comprehension (5 items); Sentence Completion (5 items); Opposites (5 items); Synonyms (5 items); and Paragraph Understanding (10 items);

(iii) a simple writing test for students in grades 3 - 5 and all dropouts, including the following parts: Naming (5 items); Content (one item scored 0 - 4); Written Completion (6 items); Story (5 items); and Dictation (one item scored 0 - 15); and

(iv) a difficult writing test for students in grades 5 and 6 with the following parts: Written Completion (5 items); Written Completion II (5 items); Content (one item scored 0 - 2); Story (5 items); Dictation (one item); and Essay (one item scored 0 - 10).

The sub-test Essay is not only scored on the basis of its linguistic qualities to form part of the difficult reading test but, since it calls for the testees to write a short essay on reasons for leaving

school, it will also be used to extract qualitative information about this phenomenon.

Numeracy

11. The arithmetic test battery consists of three independent tests: Simple Operations (28 items, addition, multiplication, subtraction and division tasks mixed), Problem Solving (14 items), and Geometry (8 items, essentially the naming of two-dimentional figures).

Intelligence Tests and Instruments Measuring Personal Characteristics

12. The verbal intelligence test to be used is based on the so-called 'Ein-Shams' test, constructed by Abdel-Aziz El-Koussy. It is an omnibus test including 30 items from a variety of sources: arithmetic reasoning, memory span, spatial imagination, syllogisms, verbal reasoning, synonyms and opposites of words, etc. The instructions and the explanations of the items are read aloud by the tester, and the items are solved by the testees in test booklets.

13. The non-verbal intelligence test is based on 'Attieh Hanna' test. In each of 30 items there are pictures of five objects, one of which does not belong with the others, and the testees are instructed to cross out the not belonging one. The test has been adapted to conditions in Egypt and provided with Arabic language instructions.

14. The Self-Concept scale measures self-concept of academic ability (SCAA). It gives a measure of perception of (i) the student's own academic ability, and (ii) his perception of how he is viewed by significant others (parents and teachers). It is a proxy for more common types of measures of attitudes and motivation.

School and Schooling Instruments

15. The teacher attitude scale measures the teacher's attitudes towards school. It is a translation and adaptation of the Minnesota Teacher Attitude Inventory (MTAI). It studies the extent to which the teacher views himself as superior as to others well as the

degree of hostility towards others (students, co-workers, etc.).

Classroom Interaction

16. An important indicator of the quality of instruction is the interaction between students and teachers in classrooms. An observation schedule similar to the Flanders method of classroom interaction analysis has been developed.

17. Other school and community variables studied include: size of the school, surface area per pupil in the school, quality of the building, qualification of the principal, availability and use of certain facilities and equipment. Teacher variables include qualifications, origin (from the community or from the outside, absenteeism from class, length of service in the school, etc.). The data are taken from school registers or acquired by means of interviews with principals. This school data would include student data (grades, absenteeism and repetition, in particular).

Interviews with School Leavers

18. Information about reasons for leaving school and subsequent experiences of dropouts will be collected by an interview schedule to be used with leavers. The questions include: reasons for leaving school, interest in returning to school, work experience after leaving school, work aspirations and social situation.

Home and Student Factors

19. Data will be collected by means of a form or questionnaire to be filled out after consultation with the teachers, scrutiny of school registers, interviews with students and dropouts, and in some cases visits to the students' or leavers' homes. The instrument includes questions of the following kind: student's age, number of rooms in the student's house, number of members of the student's family, the father's occupational status, the father's owning his own business, the industrial field in which the father works, the

family income, the father's education, the mother's education, the structure of the family, changes of school, quality of the house in which the student lives, equipment in the home, availability of books and magazines in the home, health of the student, etc.

20. All the instruments except the SCAA and the schedule for classroom observation have been tried out and the results examined. Reliability measures were computed for the tests: about .95 for the reading, writing and intelligence tests and over .90 for the problem solving test. Reliability is not defined for the Simple Operations test, which is speeded, and was comparatively low for the Geometry test. The scales measuring school, teacher, home and student characteristics consist of items taken from a larger pool of items which have been studied methodologically. An example of such a study was included in the Completion Report (Stage I) where regression analysis was used to identify variables important in predicting success and failure in school.

ORGANIZATION

Execution of Stage II

1. The main study is expected to be executed during the Fall semester of 1978. Diagram 4 gives an overview of Stage II. Preparatory work, including the printing of scientific instruments communication with school authorities and the training of Ministry of Education staff, began in June 1978, financed by a "bridging grant" (between Stages I and II) from the Bank's Central Projects Department (Education) and the TASS Division. Collecting the experimental data on pupils and school leavers is expected to begin not later than the first week of November. Otherwise, the effect of additional schooling will tend to bias grade achievement scores of students upwards. 1/

2. The critical activities to be carried out by the NCER with the assistance of Bank staff are:

(i) the printing of the tests and instruments;

(ii) the recruitment and training of a sufficiently qualified staff (interviewers, editors and coders);

(iii) the establishment of a Survey Management Unit (SMU);

(iv) the contacting of all the authorities supervising the experimental schools, as well as the teachers working in the schools to brief them on the study and enlist their cooperation;

(v) the selection and training of co-workers (generally teachers) in each school to help in the data collection;

1/ Establishing a norm for grade 4 students requires, for example, testing grade 5 students early in the school year when their skills have been "refreshed" but not yet significantly improved on by current schooling.

(vi) the collection and processing of data on the schools in order to decide which students and leavers to approach in the data collection; and

(vii) the testing and interviewing of selected students and leavers.

3. The NCER has made a thorough analysis of the operational problems involved in carrying out the main study. By October, it is expected that it will have:

(i) established the Survey Management Unit (SMU);

(ii) identified and selected potential interviewers (in addition to those from within the NCER);

(iii) prepared draft letters to the governorate and district authorities to obtain their clearance and agreement on cooperation with the individual schools in the sample;

(iv) begun drafting the training materials for the interviewers, test scorers, and interview editors and coders.

4. Particular attention must be given to the training of the interviewers. The quality of the study depends on their having a common understanding of the purposes of the study and a common approach to testing and interview procedures. The creation of a core of qualified field survey workers at the NCER will be an important advantage for future field work. During the data collection phase, teams will be organized at the level of each school. One of the team members should come from the Ministry of Education; he or she may be joined by inspectors or others from the regional and local educational offices. In addition, principals and teachers in the schools should be trained to be able to help in the work. The team member from the Ministry might be an NCER staff member of a civil servant in the

Ministry or he or she might also be a qualified behavioral researcher, recruited from the outside. The schools should be distributed to these team members on geographical considerations so that each team knows the cultural characteristics of the region covered.

5. The work in the schools would include:

(i) explaining the purposes of and methods used during the work;

(ii) selecting suitable co-workers in the schools;

(iii) training these co-workers in methods of testing and interviewing, either in the individual schools or jointly for groups of schools;

(iv) getting the names of all students enrolled in grades 3 - 6 and all school leavers completing grades 3 - 6 who left school during the years considered;

(v) selecting random samples of pupils and leavers in accordance with required procedures;

(vi) locating the leavers randomly selected for the study;

(vii) testing pupils and leavers at the schools (occasionally individual testing may be necessary) and having teachers fill out socio-economic questionnaire forms; and

(viii) interviewing leavers.

Data Treatment

6. As soon as data are available from the experimental schools, they would be brought to the NCER for scoring, marking and coding. In this center a data handling unit would be created under the SMU. Due to the amount of data, it would certainly be necessary to employ outside staff. This should be large enough to allow all quantitative data to be generated in table form as soon as possible after receipt of school data. One staff member in the SMU would be personally responsible for the data treatment. For the smooth running of the

data handling, it would be necessary to produce a data treatment manual. Bank staff would advise on this work.

7. The key-punching of the quantitative data will have to be done outside the NCER, and the SMU should find a suitable organization for the work. The objective should be to keypunch the data cards as soon as possible after the coding has been done. Standard procedures of verifying and checking the work would be employed, the organization concerned being responsible for any errors.

8. The major part of the analysis of the quantitative data would be the responsibility of the Bank, but the NCER should be actively involved and it is recommended that the Study strengthen the NCER by temporary financing of the post of a statistician/programmer, who would later join the NCER staff full-time. All data, whether analyzed or in crude form, would be available to both the NCER and the Bank.

9. The experiment in Egypt will call for the cooperation of several groups of people; field workers sent out by the Ministry of Education, central, regional and local school administrators, principals, teachers and others. All of these would be paid bonuses for their contributions. From previous experience, it is known that school leavers will have to be paid a modest compensation for their time to attend testing sessions and participate in interviews.

10. It is estimated that the data collection will call for five mandays of work in each school for the experimenters sent out by the Ministry of Education, i.e. a total of 300 mandays. The coordinating group of two or three persons would be formed before the start of the data collection and continue its work till the end of the data treatment period. The existing advisory committee would continue to monitor the study on behalf of the Ministry until all data have been analyzed and recommendations presented to the Minister.

Cooperation with Other Agencies

11. Within the country, the Advisory Committee, reporting directly to the Minister, comprises the Deputy Minister, responsible for primary education among its members, along with a representative of the University Faculties of Education.

12. At the international level, the Bellagio Group is being closely informed of our work and will be the principal disseminator of the results. The Group met on July 17, 1978 see para 5, page 90 above) to review the results of Stage I. It was agreed at that time that:

- individual agencies would identify potential case-study countries in the light of agency interests and assess the feasibility (and acceptability to the country) of carrying out a case-study. A key criterion in country selection would be an interest in improving the efficiency of basic education.
- the representatives of the International Development Research Council (Canada) and UNESCO would explore their institutional interest in providing the technical coordination required to ensure eventual comparative analysis of country findings.

Decisions on these questions would be made at the November 1978 meeting of the Bellagio Group.

CHAPTER V

RESEARCH ON INNOVATIVE NONFORMAL EDUCATION FOR RURAL ADULTS: IMPLICATIONS FOR LITERACY MOTIVATION

Catherine D. Crone
World Education

Over the past few decades, we have poured millions of dollars into educational programs focused on making out-of-school adults literate. Yet when we look at the statistics and the results of these efforts, we find that, by and large, we have failed. Why?

Many factors may contribute to the failure of specific literacy programs -- administrative structure, timing, teaching techniques -- and these factors will vary from program to program. But the drop-out rates of programs whose primary focus is literacy education provide us, I believe, with the clue that will help us focus on a critical factor common to many failing programs.

Let's face it. The basic factor in the failure of out-of-school literacy programs is the learner's lack of motivation.

In the 1960s and early 1970s nonformal or out-of-school educational programs were based on the assumption that literacy is a prerequisite for (or at least an integral part of) any educational activity if effective progress toward development goals is to be achieved. For is that not the purpose of making people literate: to enable them to acquire other skills and knowledge that will help

improve the quality of their lives?

Policy makers and program administrators have seen literacy as a valuable and necessary tool for people to function successfully in modern society. They have assumed that illiterate adults or out-of-school youth would agree; that having lost their literacy skills or never having had the opportunity to become literate, they would be eager to take advantage of programs that promised them literacy and numeracy skills.

By the mid-1970s, however, it became clear that, despite the considerable expenditure of funds and energy on literacy campaigns, large numbers of illiterate adults were not being attracted or retained by out-of-school literacy programs.

Each program has specific and perhaps differing reasons contributing to the failure of large-scale literacy efforts. But I would maintain, together with many esteemed colleagues, that the basic difficulty is neither program structure nor materials nor teaching techniques -- though these may be important. The basic error is in the assumption that most illiterate adults place a high enough priority on achieving literacy skills to put the time and energy into attending classes.

Most illiterate adults acknowledge the importance of literacy skills. But when they are asked why they do not attend the literacy class in the village, there are always good reasons: "Classes are at the wrong time", "I'm tired after working all day", "I have to bathe, take care of the children, help in the fields ..."

In other words, though the importance of literacy is not denied, it is not given the priority by illiterates that it is given by program developers. Many illiterate adults do not make the same connection between cause and effect that the policy makers do. The long-term benefits of attending classes are not seen as

as sufficiently rewarding.

No one would deny the need for illiterate people to have access to opportunities to learn, including access to literacy-oriented programs. Access to such literacy programs, however, is simply not enough for most rural adults. Remembering that attendance in non-formal education programs is voluntary, I suggest that we look to the potential learner, the illiterate adult, to find out the reason for lack of interest. And I would further suggest, based on the results of programs in which World Education has been involved,* that the problem is not lack of interest in learning. Rather, it is the nature and content of what is to be learned and the benefit perceived by the learner that will make program participation seem appealing or unappealing. The key to motivation lies within the potential learner. For we must remember that we, from the outside, cannot move anyone to do anything. Initial curiosity may attract people to a program. But without true motivation and commitment, based on perceived and highly valued benefits, the curiosity will soon turn to disinterest and dropping out. It has been World Education's program experience that the motivation we are looking for comes when people are given an opportunity to learn things that they see as critical and of immediate value to them in their everyday lives.

The question becomes "How?" we may find the answer in our original premise: that the basic purpose of eradicating illiteracy is to enhance adults' ability to become more productive members in the family, village, and national life. It seems to me

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*See, for instance, World Education REPORTS #13, "Special Report on BRAC: Bangladesh Rural Advancement Committee," and "Integrated Family Life Education Project: A Project of the Ethiopian Women's Association", by John Pettit (World Education, January 1977).

that we have been putting the cart before the horse. If we want illiterate adults -- or any adults -- to take steps to improve the quality of their lives, then let us assist them to solve some of those development problems they define as critical. Enabled to deal with such issues as health, nutrition, agriculture, or perhaps income generation, they may also begin to recognize the need to acquire or improve literacy skills in order to continue to bring about lasting changes in their lives. Or they may not. But they will have been grappling with the conditions that concern us all.

Indeed, a basic premise being put forth here is that ultimately development goals such as improvements in health, nutrition, agriculture, basic education, income, and so forth are shared by village residents, community development workers and educators, and policy makers. But in order to achieve such development goals, education at the community level must address the needs of villagers in <u>their</u> order of priority -- not in the outsiders' order of priority. Only then will individuals be motivated to take active part in educational programs for development.

If we pursue education for development purposes from that point of view, then the challenge becomes how, <u>without the use of literacy</u>, to provide education that responds to the felt needs of adults who do not see literacy as a high priority.

- that the learning materials not require literacy, so that both literates and nonliterates can use them; that they be low cost; and that they be easily produced locally;

- that the content of each session be determined by the learning group itself (literacy is introduced only if the group sees it as a skill they want - or need - to learn);

- that the educational methods involve participation, discussion, analysis, decision-making, and , if required group action.

This process was developed over a six-week period in several villages in the Philippines in collaboration with the Philippine Rural Reconstruction Movement. Evidence from that trial period was sufficiently encouraging for AID to fund a two-year research grant to develop and refine this methodology further and to determine the lone-term impact of the approach on both the learning groups and individual participants and the extent to which it enables individuals and groups to achieve their goals.

The second phase is being carried out in six villages in Kenya, in collaboration with Tototo Home Industries under the auspices of the National Christian Council of Kenya, and in six villages in collaboration with the Philippine Rural Reconstruction Movement.

It may be helpful to elaborate here on some other important principles and assumption of the project.*

- Women's concerns must be addressed without excluding the legitimate concerns of men. Learning groups are constituted based on existing group patterns in an area. Where women cluster together the learning focuses on them. When men are part of the cluster, learning issues include their concerns.

- Education is to develop self-sufficiency; this entails learning to use existing resources and to increase access to resources.

- Individuals control their own learning. Education succeeds only when it stems from the participants' experiences and connects with their inherent ability to solve problems. Facilitating (teaching) is enabling individuals and groups to remove the obstacles that impede their progress.

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* The rationale for the educational approach used is described in detail in Noreen Clark's Education for Development and the Rural Woman

- Learning materials are used to help create a process where participants can share and reflect on their experience and consider new actions. They must also enable the needs of participants to be continually illuminated.

- Education at the community level must address needs in the order of priority of the learner. During both Phase I and Phase II, the priority need stated most frequently was increased income.

Although this paper is not meant to focus on the actual operation of the project, I believe it is important to describe in some detail the educational approach being used -- which we have termed the Self-Actualizing Method (SAM).

At the village level, the program follows this sequence of activities:

1. Village leaders are consulted, their cooperation and approval sought, as prerequisites for initiating the program in their village.
2. A local person meeting criteria set by the local agency is selected by the village to be trained as village educational coordinator.
3. The project field staff -- both the full-time facilitators who are experienced community development workers and the coordinators -- undergo intensive training conducted by the central staff. This covers needs assessment, instructional methodologies, materials development, field observation, and evaluation. As each of these is discussed, the trainees learn the process of developing the tools, then actually develop and field test each one.
4. The village coordinator explains to the adults in the village that the program involves a high degree of learner participation, both in the learning experiences (since there is no traditional teacher who supplies all the answers) and in the decision-making process (topics to be covered, program structuring). The coordinator also explains that literacy is not a

prerequisite to participation, answers any questions about the program that may arise, and invites the villagers to attend the initial sessions to decide for themselves whether to join.

5. In carrying out the initial needs assessment in each village, a team composed of facilitator and village coordinator finds a common meeting place and engages the villagers in a variety of informal, information-gathering activities (including having them tell stories about pictures, reacting to taped, open-ended dramas, answering projective questions).

6. In analyzing the data generated during the needs assessment, the project staff looks for common themes in learners' interests. Based on these themes, they develop initial learning experiences and materials which will give the learners the opportunity to determine which topics are of greatest interest and, given the local resources available, which are feasible to pursue.

7. The field team of facilitator and coordinator then conducts the learning sessions, at a time and place chosen by the learners as most convenient. In addition to providing new learning opportunities, each session serves as a needs assessment process for the subsequent one. That is, instead of designing the total curriculum in advance, the field team plans one lesson at a time, thus being able to pursue a specific learning interest as thoroughly as the group wishes and to change the focus of the sessions as the group identifies new interests.*

8. In addition to choosing the topics to be covered, the learners help decide the structure of the presentations. Examples of issues for the group to handle may include the formation of small groups to pursue specific learning interests; the use of local technical resources and facilities; and an inventory of community resources.

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* These interests are likely to include, for example, nutrition, health care, income-generating activities, or literacy.

9. Regular meetings with the central project staff assist the field teams in responding to changing interests and in preparing materials. At these meetings, the field teams exchange and develop new ideas and techniques with the aid of consultants.

10. As part of the ongoing evaluation, the field teams exchange visits between villagers and the project director and field work supervisor make frequent field visits. There are periodic staff meetings and in-service training workshops. A critical part of evaluation is documentation of the goals and objectives of village participants at the onset. Outcomes attributed to the program will be documented in three major evaluations during the life of the project. In these evaluations data will be collected to determine if the methods used have assisted villagers to achieve their goals and objectives.

The formative evaluation system, which has been in operation since the beginning of the field work, yields ongoing data about the program operation, the educational approach and materials, and successes and difficulties encountered. The summative evaluation system, with midpoint and final evaluation for each site, will yield data concerning the impact of this project on both groups and individual participants.

From the data generated through the various components of the system, the project staff expect insight into a number of issues that now face policy makers and administrators of nonformal education programs whose primary purpose is to meet basic human needs and improve the quality of life.

We hope that the project findings will be helpful in answering some of the critical questions underlying this conference:

- Will participation in this kind of program and achievement of success as defined by the learner motivate that person to seek training in literacy skills?

- Are villagers more motivated to take part in and sustain interest in educational programs when village groups continuously define their own needs, interests, and problems and take responsibility for seeking solutions to them?

- Does the improvement in the quality of a rural villager's life require literacy? or can illiterate adults learn sufficient problem-solving skills to meet their needs to their own satisfaction without literacy?

Other questions of interest to the project staff include the following:

- What are the priority concerns of rural women?

- What is the impact of this approach on the lives of villagers? Does it bring about change in nutrition practices? health? agriculture? income generation?

- How do villager-defined problems correlate with priorities set by policy makers or educational planners?

- Can this educational process initiate the kind of self-confidence and self-sufficiency needed for groups to continue to meet and solve their problems even after the project comes to an end?

Final results will be available in early 1980. But preliminary data already are beginning to show some interesting trends in relationship to these questions. For example, as was true in the trial groups in Phase I, most village groups in the project have identified development of income-generating activities as their highest priority. After four months of field activity in the Philippines and six months in Kenya, the data collected indicate that several groups have met with high degrees of success in setting up small businesses to produce income.

One might conjecture that as these kinds of activities develop and expand, the illiterate participants may begin to feel a need to acquire or improve their literacy skills in order to improve their ability to operate the enterprise. Data from a site in Kenya show some evidence that this may indeed be the case, although it is too early to draw conclusions about trends and results. However, Noreen Clark, chief consultant to the project, and Connie Madayag, director of the project in the Philippines, will discuss their observations and reactions based on activity to date during the panel presentation.

CHAPTER VI

NEW RESEARCH APPROACHES TO LITERACY DEVELOPMENT IN TANZANIA

Yusuf O. Kassam and Yohana K. C. Masisi

Introduction

Before examining new trends in literacy research in Tanzania, it is necessary to give a brief review of the literacy situation prevailing in Tanzania at present. The massive National Literacy Campaign which was conducted very vigorously during 1972-75 and which grew out of the UNESCO/UNDP Experimental Functional Literacy Project in the Northern regions of Tanzania had managed to enrol a colossal figure of about 5.2 million learners aged 10 years and over by the end of 1975[1]. This figure accounts for 88% of the total number of known illiterates. As a result of the National Literacy Examination in August 1975, in which 3.8 million persons participated, the illiteracy rate was reduced from 67% to 39%. The performance of those who participated in the literacy tests revealed that 37% of them (or 1,403,985 persons) achieved levels 3 and 4 and these were considered to be literacy graduates according to the national criteria for literacy. Those who performed below level 3 (63%) were not considered as having become literate

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1 For more details, see E.P.R. Mbakile, "The National Literacy Campaign: A Summary of Results of the Nation-Wide Literacy Tests." Literacy Project Office, Mwanza, 1976.

according to the national definition of literacy. However, it was estimated that the Campaign produced a total of about 2 million literates (that is, at levels 3 and 4), and this figure was computed by applying percentages of performance by those who participated in the tests to obtain estimates of probable performance of those who did not appear for the tests. An additional 806,422 people passed at levels 3 and 4 in the literacy examination held in August 1977.

The Tanzanian National Literacy Campaign constitutes quite a remarkable achievement in many respects particularly in being able to mobilise and enrol about 5.2 million illiterates. This success in turn partly influenced the decision made by the TANU National Executive Committee in 1974 to achieve Universal Primary Education by the end of 1977, that is, 12 years ahead of the original target. As noted by the NEC meeting.

> "It is clear that the tremendous successes which have been achieved in our adult education programmes have been brought about by the use of revolutionary techniques in the implementation of those programmes." (TANU. 1974: 6)

It was therefore envisaged that Universal Primary Education will be achieved by following the revolutionary pattern of the National Literacy Campaign. The traditional and rigid considerations of logistics and economics had to be underplayed.

Turning to research for literacy development, while various small-scale formalised researches have been conducted in such areas as the evaluation of the socio-economic impact of functional literacy and pedagogical evaluation related to the teaching of literacy skills, and the content of the different primers[1], the priority

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[1] See for example. Mbakile E.P.R. and Singh B.N., Final Evaluation Report (July 1973 - June 1976). Mwanza Literacy Project, Mwanza, 1976.

in literacy development at the present stage in Tanzania lies in the continuation of the mass literacy campaign and in the rapid provision of a variety of literacy follow-up programmes[1]. At the same time, however, innovative research approaches of the qualitative and participatory type have begun to be applied in literacy development.

For the interest of the participants of this Workshop, this paper will focus on an examination of two main innovative examples of research in literacy development namely, (1) the evaluation of the qualitative impact of literacy on the people and (2) the mobilisation of the community in retaining and using their newly acquired literacy skills for self-reliant development using the participatory approach.

1. The qualitative impact of literacy on the people

a) The goals of literacy

The goals and objectives of adult literacy are now increasingly recognised as transcending not only the mere acquisition of the 3 R's but also the narrow and technical socio-economic changes. Unesco's formulation of the concept of "functional literacy" with its focus on the integration of literacy skills with socio-economic development was undoubtedly a step forward from the traditional approach of bestowing the 3 R's as an end in itself. However, this functional concept of literacy which puts too much emphasis on the economic aspects of development through literacy soon found itself lagging behind the much enlarged and broader concepts of development, a concept which began to be articulated with increasing vigour and clarity in the 60's. Among others, President Nyerere of Tanzania is one of the chief proponents of

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[1] As for example, Rural Libraries, Folk Development Colleges, Correspondence Courses, Literacy follow-up readers, etc.

this new concept of development. The new concept of development has been steadily shifting from the purely economic and technological phenomenon of progress towards the road of the liberation of man as the central purpose of development. The new concept of development stresses the development of people rather than things; it stresses the importance of social equality, social justice and self-reliance; it stresses the development of a particular "quality of life" which is man-centred. "The purpose of all social, economic and political activity must be man." (Nyerere, 1978: 316). It believes in the necessity of people's participation in the planning and decision-making processes of their own development. Faith is put in the people's own capacity to develop themselves instead of them being pushed about, for "people cannot be developed; they can only develop themselves" (Nyerere, 1973: 60).

Arising from these interpretations of development, Nyerere argues that adult education and education in general should contribute to the kind of development that is "for Man, by Man and of Man". The purpose of education "is the liberation of man from the restraints and limitations of ignorance and dependency" (Nyerere, 1976/77: 2).

The publication of Paulo Freire's Pedagogy of the Oppressed and Cultural Action for Freedom forcefully strengthened the new emerging interpretations of development and analysed the liberating potential of literacy action. Freire's concern with the oppressed peoples and the "wretched of the earth" who are submerged in the "culture of silence" led him to propound a revolutionary methodology of the educational process in general and the adult literacy process in particular. Freire argues that the "ontological and historical vocation of the oppressed is to liberate themselves and become more fully human" (Freire, 1970). The purpose of all educational action including the literacy process should therefore be to

liberate the people through a process of "dialogue" and "conscientizacion" which can help adults to "name the world" and acquire a critical awareness of their oppressive environment which can then lead them to take the necessary action to transform it. In this process, the learners become the subjects and actors rather than objects and spectators. In addition to enabling the illiterate to acquire a critical outlook at his world. Freire's methodology is also designed to help the illiterate to discover his own potential and regain his humanity, his self-assertion, a sense of dignity and a new awareness of self.

In the light of the new meaning and definition of the purpose of development, the Persepolis International Symposium in 1975 articulately crystalized the need to relate literacy efforts towards the fulfillment of the more qualitative goals and objectives of development. The "Declaration of Persepolis" clearly recognised, among other things, that "Literacy work, like education in general, is a political act. It is not neutral, for the act of revealing social reality in order to transform it, or of concealing it in order to preserve it, is political" (Persepolis, 1975: 2). It was further argued at Persepolis that literacy should help individuals to acquire critical awareness and creative imagination. Literacy was recognised to have a potential for contributing to the liberation of man and to his full development. The illiterate should not be the object but the subject of the literacy process and therefore it was stressed that participation is an integral purpose and the very condition of the literacy process. To quote Rahnema from one of the papers presented at Persepolis, the ultimate objective of literacy is to enable one -

> to read the world rather than the word. . . . To become literate . . . is to acquire an authentic voice capable of relating one's word to the realities of the world. It is to participate in the creation of a culture of freedom in place of the prevailing culture of silence. . . . His 'literacy' is measured by his capacity to perceive the world without illusions or fear and is exercised through 'naming the world', expressing his innermost feelings about the realities which impinge upon him . . . (Rahnema, 1975: 28)

b) The major weaknesses of literacy evaluation methods

Although a great leap forward in the new conception of the goals of literacy and therefore of development has been made, the evaluation methods designed to illuminate the achievement of the enlarged and qualitative goals of literacy have not yet been devised or used. Most, if not all, of the different approaches and methods have been very highly technical and mechanistic and have focused on the measurement of quantifiable socio-economic results. Such methods have characterised the literacy evaluation experiences of many countries including those of Unesco's Experimental World Literacy Programme (EWLP).[1] One can identify at least three major weaknesses.

1. The problem of illiteracy and the illiterates themselves has been conceived and examined from the literates' viewpoint and values. It is we the literate who make assumptions about the nature of the problem of illiteracy. It is we the literate who according to our own preconceived notions and class biases draw up a list of possible changes and effects that can be brought about by literacy and then go about verifying those anticipated changes. We have made little effort in seeking the views

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[1] Unesco's World Experimental Literacy Programme - A Critical Assessment (1976) is an excellent book which makes a most penetrating and lucid analysis of the flaws and shortcomings of the EWLP and draws many lessons for future action.

and perceptions of the new literates themselves by involving them actively in the evaluation process. We have made little effort to understand the illiterates on their own terms, and where some pains have been taken to do so, they have been regrettably accompanied by paternalistic tendencies. Some of us have been a little bit more imaginative by trying to put ourselves in the shoes of the new literate, thereby hoping to obtain a more intimate knowledge of his world. Yet real intimacy is only possible if the figurative act of being in someone else's shoes begins to pinch us literally. It is we who in our elitist positions of comfort, power and privilege preach to the illiterates what we think are the "modernizing" and socio-economic benefits of literacy, and, therefore, it is little wonder to hear the much quoted but legitimate response from them. "After we become literate will you give us a job in your offices?". In the case of Unesco's EWLP, the evaluation exercise became even more distorted because the evaluation specialists and others who came from the present generation of specialists in industrialised countries "simply do not have personal experience of illiteracy as a chronic national problem" (Unesco, 1976: 11)

2. The impact of literacy has been evaluated by investigating and measuring mostly behavioural changes related to socio-economic development. The invisible, the innermost, the more personal and qualitative effects of literacy on the people have been ignored. Such a narrow focus in literacy evaluation has been the outcome

of the purely economic and technological determinants of what constitutes development which has led us to view and design literacy "as an overwhelmingly technical solution to problems that are only partly technical" (Unesco, 1976: 122)

3. Partly connected with the technical conception of literacy, evaluation of literacy impact on development has tended to rely too heavily on quantitative research methods. Such methods have invariably resulted in over-simplifying and distorting social reality by ignoring the dynamics and complexities of the human context and the intersubjective world. Quantitative methods are often accompanied by elaborate statistical analysis for the purpose of achieving the sacred goal of scientific precision. Although statistics are in some instances necessary and useful, in almost all cases of the investigation and analysis of a human and social phenomenon, the statistical approach alone serves to silence the human voice and strangle the human context and its end-product is either a mere skeleton or a silhouette of social reality.

The use of quantitative methods can show and count the trees but they often prevent us from seeing the forest. The qualitative data in social science research in general are, by and large, overlooked and sometimes even rejected outright because they are claimed to be subjective and impressionistic. Yet, as Myrdal has analysed, the so-called "scientific objectivity" in orthodox social science research has proved to be a myth (Myrdal, 1969). The conventional

> social science research methodology has even devised certain techniques of "neatly" transforming qualitative data into quantitative data (a flesh and blood removing exercise, as it were). To quote Unesco's assessment of the EWLP again, "single-minded preoccupation with ever more sophisticated quantification at least sometimes blinded EWLP evaluators to simple truths that were in plain view" (Emphasis added: Unesco, 1976: 152-3). In the same vein, but with reference to social science research methodology as a whole, Kathleen Rockhill has argued that, "As a science of research has developed around quantitative measure, we've sacrificed our understanding of reality to methodological rigor" (Rockhill, 1976: 2)

In order to illustrate the major weaknesses in literacy evaluation as outlined above, Unesco's EWLP makes an excellent case from which concrete examples can be drawn.

c) The evaluation of the UNESCO/UNDP Experimental World Literacy Programme (EWLP).

In the EWLP which also included Tanzania, the socio-economic impact of literacy was evaluated by devising a long list of indicators for testing and measuring changes in the new literates' behaviour. The changes were measured with the help of interview schedules and observation check-lists and the information obtained with such instruments was statistically analysed.

The various indicators of change were grouped under three main behavioural categories: insertion into the milieu, mastery of the milieu and transformation of the milieu. The heading "insertion into the milieu" consisted of indicators designed to measure changes in areas such as interest in further education, management of per-

sonal finances, exposure to mass media, the seeking out of technical advice, use of the 3 R's and participation in formal organizations. Under "mastery of the milieu", the indicators of change were related to behaviour at work, knowledge of modern technical practices, adoption of modern practices, and conservation and reproduction of the labour force. The indicators of change in the third behavioural category of "transformation of the milieu" were concerned with the means of production, the volume of production, cash income, income in kind and consumption of durable goods.

Irrespective of the favourable or unfavourable results obtained by EWLP through this type of evaluation, one can raise a number of fundamental questions against the adequacy and even validity of such an evaluation design. First, no attempt was made to look at the more personal and qualitative changes in the lives of the new literates -- in their thinking, their feelings, their perceptions about themselves and their environment. The emphasis was put on measuring the quantitative changes and the areas of change were predetermined and selected by the evaluators. If it was deemed important to identify the quantitative changes -- and to a certain extent the importance of quantitative changes is not totally denied -- could not that be done by making the new literates themselves assess and interpret the quantitative changes?

Secondly, all the indicators selected were unavoidably stamped by the values and standards cherished by the planners and evaluators. For example, with reference to one of the areas of behavioural change, the Unesco assessment of the EWLP had this comment to make: "The use of 'consumption of durable goods' as a criterion of 'transformation of the milieu' was, to say the least, a curious projection on to poor nations of a consumer oriented system peculiar to certain highly industrialised societies. In one EWLP

country where per capita annual income GNP is less than $200, this 'consumption' criterion was broken down into indicators that included safety razors and wrist watches, relatively luxurious articles of individual consumption" (Unesco, 1976: 153)

The indicators used to measure changes with respect to "mastery of the milieu" focused on the essentially technical and economic aspect of mastering the milieu. The Unesco assessment report again raised very legitimate questions: "In acquiring this kind of mastery of the milieu, to what extent has the new literate become dependent on which external socio-economic process and forces? Has literacy enabled the new literate to know and understand these processes and forces? To come to grips with them? To have voice in controlling them? What implications has the new literates accession to mastery of the milieu for the fate of his or her less favoured neighbours and compatriots?" (Unesco, 1976: 181)

The Unesco assessment report concludes its discussion on the evaluation methods used in its EWLP projects by admitting that the kind of evaluation design that was used "could only reveal the short-term and most mechanistic socio-economic effects of the world programme" (Unesco, 1976: 183). No other conclusion could have been more appropriate and accurate.

There is a need, therefore, for redressing the balance by shifting away the emphasis from evaluating the quantitative socio-economic effects of literacy to illuminating the more personal and qualitative impact of literacy on the development of the people.

d) <u>The anthropocentric approach and the dialogue method in literacy evaluation</u>

In the light of the more liberating, humanistic and man-centred goals of literacy, and in view of the fact that the process of adult literacy is an intensely emotional experience, we

believe that by far the most significant and profound impact of literacy on the people can be found in the personal and qualitative realm of the people's own thinking, their feelings, their own vision and their own perceptions about the change that may have occurred in themselves and in their situation.

The investigation of such personal and qualitative changes in the people can best be illuminated by adopting an "anthropocentric" approach which involves the interpretation of reality exclusively in terms of human values and human experience. The impact of literacy is portrayed exclusively in terms of the participants' own perceptions and interpretations of the literacy process as freely discussed by themselves rather than through a set of selective criteria, assumptions and pre-fabricated research instruments of the educators and evaluators. The anthropocentric approach is qualitative and humanistic, and epistemologically, it helps to make a more accurate reflection of social reality, for who would know best where and how the shoe pinches if not the wearer himself? Having recognized the authentic source from which social reality can be accurately explained, the next question to ask is what are the best methods of tapping this source?

Arising from the anthropocentric approach, we believe that one of the most reliable and sensitive methods of feeling the pulse of a human activity such as the literacy process is to let the participants evaluate themselves by having a dialogue with them on individual basis on how they perceive themselves in their transformed state of forming the new literate members of their community and nation. The dialogue is taped and then a verbatim transcription of that dialogue is produced. Apart from editing the verbatim transcription as minimally as possible, it is extremely important not to tamper with it in any other way, for what is crucial in such an

exercise is not only to record the participants' own thoughts and feelings but to do so in their own words and idiom and in their own style of expression. The way they themselves understand and perceive reality in their own words is what Freire calls "a decodification of a codified existential situation" (Freire, 1972: 45). Having transcribed all the dialogues, one could then analyse them and highlight the main themes discussed therein. But such an analysis should be conceived of as only a supplementary method of making a summary description of social reality which in the very first place has already and authentically been described as elaborate detail by the people themselves.

The dialogue facilitates the portrayal of the uniqueness of individual perceptions and experiences. In addition, whereas the information obtained through the use of the conventional instruments such as questionnaires, interview schedules, checklists and the like, superimposes the description of empirical social reality on to a predetermined framework of that reality, genuine dialogue eliminates most of the pre-conceived elements of the traditional research process and makes it possible for social reality to be described on a "clean slate", as it were. The dialogue helps to capture and portray the dynamics of the social interactions with the milieu through which the effects of the literacy processes are felt and experienced. To assess the literacy achievement of the people as a merely "technical" issue based predominantly on quantitative and statistical methods "carries the underlying assumptions that complex qualities of human experience can be adequately registered in statistical stretches and meaningfully compared in numerical tables" (Callaway, 1976: 4). The dialogue method as used in this study is designed not to quantify, verify or predict the personal and qualitative impact of literacy but rather to "illuminate[1]

[1] For an elaboration of the concept of "illumination", see M. Parlett and D. Hamilton. Evaluation as Illumination: a new approach to the study of innovatory programs, Edinburgh, Centre for Research in the Education Sciences, University of Edinburgh, 1972.

it. In assessing literacy achievement without paying full attention to the complexities and dynamics of the social reality is not different from observing and studying the responses of animals to a given stimulus by isolating them from their habitat and putting them in laboratories. The "agricultural-botany model" of research, to use Parlett's coinage, which has so commonly been used in evaluating the impact of educational programmes can only produce a superficial and mechanistic, if not distorted, description of social reality.

While the dialogue method makes it possible to get a more accurate glimpse of the total human context with all its complexities and social interactions, the very process of dialogue serves a number of other important purposes. Through dialogue, the people participate actively in the research process whereas the conventional methods and instruments treat those who are researched upon as mere sources of information (as mere cogs in the machine), a process which serves to further alienate the oppressed. Through dialogue, the participants of the literacy process are treated as the central subjects and actors of that process and they are given the opportunity to "name the world". The dialogue helps to mobilise the human creative potential, stimulates a greater degree of self-awareness and generates interest and motivation. In short, the dialogue is a liberating experience.

In the light of the foregoing conceptual framework, a small scale study designed to evaluate the qualitative impact of literacy was carried out in Tanzania in 1977.[1] One of the other objectives of this study was to produce a literacy follow-up reader consisting of the verbatim dialogues that were conducted with the new literates.

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[1] See Yusuf O. Kassam. Illiterate No More: The Voices of New Literates from Tanzania, Department of Education, University of Dar es Salaam, 1977. (Details on the methodology used is also outlined in this study).

One of the verbatim dialogues (translated from Kiswahili) is appended to this paper to serve as an example.

2. Mobilising the Peasants for the Retention and use of newly acquired Literacy Skills through Participation: The Chiwanda Example.

This part of the paper attempts to look into what is involved in the process of mobilising a community for the retention and use of newly acquired literacy skills for self reliant development using the participatory approach. An education cum production project has been used because experience has shown that mere listening, reading and discussing are not enough to commit a peasant to effective use of some acquired skills. Something more practical, going beyond the discussion room is required. So when such discussions are tied up with some production process, then things take a different turn. The Chiwanda Project[1] is a case in point.

Chiwanda is a lacustrine ward in the south west corner of Tanzania along the shores of Lake Nyasa. It stretches along the lake for 18 miles, and for the whole of this length it is overlooked by the Livingstone mountain ranges which have a rain shadow effect to the area.

In this area live some 8,454 people divided unequally between five villages.

As regards literacy the ward shows a comparatively high rate of literacy: thanks to the missionary activities in the colonial era supplemented by the National Literacy Campaign. It is estimated that approximately 90% of the Chiwanda people are literate. And as regards child education the ward has five primary schools, one in each village.

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[1] For more details see Yohana K.C. Masisi, "The Chiwanda Education Project: An Approach to Peasant Animation", Dar es Salaam, Institute of Adult Education, 1978.

The inhabitants of the area are the Wanyasa whose main activity is agricultural production for subsistence. Their main food crops are cassava, a little maize and paddy. The main farm implement is the hand hoe.

Fishing is the other important activity in the area. The catch is normally small and rather irregular especially in the September to November period, when the people find it difficult to secure the main ingredient for preparing sauce. Fish is the main ingredient of the Wanyasa's sauce. Traditionally the Wanyasa would not eat vegetables or beans.

So the Wanyasa are characterised by their lake orientation. For years men have earned their cash through the notorious migrant labour. Those who remained at home carried on fishing. For each day the fishermen would get up early in the morning for the day's fishing operation. The rest would spend the whole day by the shore waiting for the fishermen to arrive at about 2:00 p.m.

Like their men folk the Wanyasa women are also lake oriented. While the men continue fishing in all uncertainty, the women prepare the cassava meal and wait anxiously for the men to come back with fish. If the men came back with no fish, which is quite common, the family will normally go without a meal for the day.

Thus traditionally the Wanyasa have looked at the lake as the only source of sauce. This attitude has had serious consequences on the development possibilities in the area. Owing to the irregularity of the size of the catch - the main source of protein - protein malnutrition has ravaged the ward. But to the Chiwanda people this was not a problem. For they have lived with it for so long that it was difficult for them to recognize it as a problem.

The Problem Identified

The Government had recognized Chiwanda as a "grey" area, needing immediate attention. As such over the years a number of projects had been channelled into the area through the normal top - down channel of communication. Every one failed. Such failure convinced the Government officials that the Chiwanda people were only interested in gazing at the lake. This was the sort of verdict that had been pronounced on the Wanyasa when the Institute of Adult Education stepped in, in 1975.

In 1975 the Institute of Adult Education literally operated in the whole of the country implementing the "Food is Life" mass campaign. The campaign discussions were carried on through discussion groups, each with a popularly elected chairperson and a group recorder who was also trained in group dynamics. It was during such discussions that the Wanyasa came to realize that they have been living with a problem - malnutrition. They analysed the situation - the causes of malnutrition, its signs, its most vulnerable victims and the means of fighting the problem. They finally concluded that there was a need to arrest the situation. It was at this time that they appealed to the Institute to give a hand, having themselves taken the most important steps, namely:

- Identifying a felt need
- Internalizing the need as their need
- Realizing that whatever change is to come, must be brought about by themselves.

But at this point the Wanyasa recognized further that to concretely tackle the problem they needed to be better equipped in terms of:

- more knowledge in food and nutrition
- more knowledge in skills of running farm enterprise
- more knowledge in the practice of child care

- more knowledge in project planning and management, and
- more knowledge in basic skills like literacy and numeracy.

The Project Objectives

The Institute on its part saw the project objectives as consisting of:

- provision of an adequate learning situation for the Chiwanda people for the acquisition of certain farm enterprise skills, nutritional knowledge.
- provision of an environment that would encourage the Chiwanda people in practising their literacy and numeracy skills.
- the reduction of the incidence of malnutrition caused diseases by the end of 1978.
- the institutionalization of the practice of taking a balanced diet in Chiwanda by 1978.
- the establishment of orchards, gardens and a poultry unit as learning centres for the project.

The Strategy Adopted

Since man cannot develop by proxy (Nyerere, J.K., 1970) and at issue was a development question, the Institute found it pertinent for the Wanyasa themselves to be instrumental in their own socio-economic development. Hence their active participation was a critical component in all the stages of the project.

So the first step the Institute took was to request the Chiwanda people to establish a Project Planning Team. The team was duly established and it comprised:

- all the Chairmen of the five project villages
- U.W.T.* representatives from the five villages
- the C.C.M.** Ward Secretary
- The Faculty Members from Agriculture, Veterinary, Health Education, Ujamaa and Cooperatives and the Institute of Adult Education.

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* U.W.T. - Tanzania Women Mass Organization.
**C.C.M. - Chama Cha Mapinduzi (The Revolutionary Party).

The first task that the team addressed itself to was the re-examination of the needs as had been identified in the study groups during the "Food is life campaign", 1975.

The team examined them with particular reference to relevance, priority and sequence. The team finally came up with the following set of objectives:

(i) the acquisition of skills and knowledge in:
- project design, management and evaluation
- vegetable and fruit growing
- modern poultry farming

(ii) the acquisition of knowledge in food and nutrition

(iii) the institutionalization of self evaluation

(iv) the realization of peasants' own potential in development, and

(v) practicing reading and writing.

Learning by Doing

The next step was the coaching of the team members by the Institute staff in methods of problem identification: conducting a feasibility study; project design, monitoring and evaluation; simple questionnaire construction and administration. The Institute did that because it felt that participation without the necessary skill and information at best is a futile exercise. And yet the success of rural projects is often a function of the degree to which the target group is involved in their formulation and subsequent implementation (Morss, E.R., et al 1973)

After these training sessions the Chiwanda people undertook a simple economic base study of their ward in an attempt to secure baseline data necessary for meaningful planning. The questionnaires that were used were constructed by the villagers themselves. The survey covered 363 respondents. Of these 45 were from Ntipwili

village, 41 from Matenje, 119 from Kwambe, 86 from Chimate and 70 from Ng'ombo. The survey revealed among other things that of the then 6,143 inhabitants of the ward,

- 44.4% were adults
- 11.0% were above 60 years
- 27.0% were children under five
- 85.0% of the adults were arable farmers
- 6.4% of the adults were fishermen
- Each household had on average three hens, one rooster, two mango trees and five banana plants; and
- the per capita income was below the national average T. shs. 1,000/=.

From these figures the Chiwanda could see how marginal their economy was. After this the Chiwanda people set out to design the "Chiwanda Nutrition Education cum Production Project". In the process the Chiwanda people realized how important it was for one to be able to read and write. In fact the people who found themselves unable to fill the questionnaires independently saw in its starkest form the need for literacy skills.

End of Project Status (EOPS)

A survey of the performance of the project in March, 1977 a year after its inception and carried out by the people themselves indicated that each village had two acres of orange trees, pineapples and an acre of vegetables. There were 300 layers laying over 160 eggs per day. Besides the communal establishments, 800 orange trees distributed to individual households were thriving. And egg eating had been institutionalized. Thus the poultry unit was earning the ward a weekly income of T. shs. 558/=, that is to about 2,232/= per month.

On visiting the ward the peasants themselves express their

appreciation of the change by saying that it was the first time that they have had an income generating activity in the ward. This feeling is further exemplified in the following anecdote: As one of the Institute Tutors was touring the area recently, one of the typical Munyasa came to his rest house and showed him a home-made watering can - made by half an oil tin gallon - with perforations at the bottom to reach the deep well.

With an air of self confidence he offered this tutor a bunch of chinese cabbage picked in his home garden and remarked "a year ago one had only one lake as the source of relish but your Institute has now shown us a second lake - the land. How much do you rate my home work, sir?" (Pointing at the watering can and the bunch of chinese cabbage!) What one sees here is a real change of attitude.

In summary, we would like to point out that working with the peasants is not an easy thing, especially if a certain amount of reading and mental work is required. For one thing unlike academicians peasants are used to working with their hands only. So requiring them to exercise, in the process of production, their mental faculties is at best to interfere with a proven path. However our experience has shown that with proper guidance the peasants are bound to be critical facilitators in their own development process. But for that to come about the experts or animators must realise their precise role and place in the whole process. In addition, the Chiwanda participatory approach has been quite successful in motivating and inducing peasants to use and, therefore, retain their literacy skills. In an attempt to provide a format for the peasant expert interaction in any one educational process we have attempted, on the basis of Chiwanda experience, to develop a participation profile (see appendix 2). As can be seen both the clientele and faculty have something to offer at each stage in the development process.

Appendix 2: Dialogue

"I was made to work like a plough" - Yusufu Selemani

Ndugu Yusufu Selemani is a worker at the Tanganyika Coffee Curing Company Limited, Moshi. He is 38 years old and has been working at the factory since 1967. He is married and has five children: two girls and three boys, all of whom are schooling in Moshi. He started to learn literacy in 1975.

General self-perceptions about being literate

Ever since I was employed to work at this factory, I used to face burdensome problems. Because of my illiteracy, whenever I was asked to carry a bag of coffee, my supervisor had to accompany me to the store to make sure that I deposited a bag of coffee of a particular grade in the appropriate storage places. The quality of coffee has many grades, as for example, AA, A, PB, Af, C., etc., and each grade of coffee throughout its various stages of processing must be stored in the appropriate places which are all numbered - 12M, 24C, 15K, and so on. Now that I have become literate, I can do this job all by myself without being physically escorted by my supervisor. How can you as an adult and a father of children tolerate being treated like a child - 'go there, take this, bring that' - all under close physical supervision? But now I can even detect mistakes made in the storage exercise and point them out to the supervisor.

I can now read all the letters I receive from my relatives and friends and I am able to reply them. I can without anyone's help send money home. Previously I had to beg and implore someone to help me write letters for me to my wife and send her some money

whenever she went home. In that process, all my secrets were exposed. It is also possible that the person who writes letters for you to your wife can write a lot of rubbish and you don't know about it.

Literacy has opened our eyes and it has done us such a lot of good that I now believe that if anyone refuses to become literate he should be dismissed from his job. I now realize that when I was illiterate I was made to work like a plough being dragged by a cow and that was a humiliating experience. I was like a blind man being led by one who can see.

The benefits of literacy are innumerable. Now that I have become literate I feel that before I was carrying a small lantern but now a pressure lamp has been brought to me. I can now see much better. I can now hold a pen and sign my own name instead of using fingerprint. For all this I am very grateful. If a man is not grateful for such great changes as a result of literacy, I don't know for what else can one be more thankful. The nation has remembered that some of its citizens are backward and has consequently tried to help us to move forward. If someone responds by saying, 'Leave me alone, I will reach there myself', he is mistaken. If a literacy teacher holds your hand and offers to help you to jump over the river you should really be thankful.

Before the literacy classes were started at our factory by the new Tanzania management, the old foreign management did nothing to alleviate our oppressed state. They maintained our ignorance and it seems to me that they actually took delight in pushing us about like a plough. The truth is that if I start talking about my former oppression and wretchedness, I will not be able to finish talking about it even if I spend a whole day. In short, when I started to work in this factory one of my legs was inside the factory and

the other was outside because your employment could be terminated in a most arbitrary fashion and there would be no law to protect or defend you. The manager was the Lord Justice himself: he decided and there was no one who could question him. You could not fight for your rights - if you are told to go, you go. But now I can fight for my rights, and before I take any personal initiative of which I am capable, there is the Party branch at the factory as well as the NUTA branch both of which are very alert and watchful and which can stand up on your behalf. This is one of the fruits of Independence. I am thankful to God. No one can now flout your rights and get away with it. It is not worth looking backward anymore, life was very tough for us. Now you cannot be dismissed arbitrarily. If a worker makes a mistake, he is advised accordingly. Formerly, if I had felt tired of my job and had decided to quit, no body would have cared. But now you are counselled by the various organs at the factory. You feel respected and appreciated. Unlike previously, the Manager cannot just pass by you without greeting you and sometimes even talking with you. This country now is full of laws. I now feel a more complete human being. It is like being born again and all your rights are explained to you.

As a result of literacy I now understand the whys and wherefores of things and because I understand I can now maintain my own self-respect. If I see a signpost which says 'Don't Pass', I stop and thereby preserve my self-respect. If I don't obey the instructions I will lose my self-respect. People realize that yesterday and the day before this man used to get his letters written but now he can write them himself. I go to the post office myself and ask for air mail postage stamps. Formerly, when I sent some money home in a registered envelope, I used to ask the postal clerk to give me that 'big envelope'. I didn't understand what a registered envelope

meant. When the clerk weighed my letter, I used to ask him why he was weighing my letter and not of other people who dropped their letters straight into the mailbox. But now I understand every thing. I know the difference between an ordinary letter and a registered one. People around you notice these changes and they consequently respect you. They say, 'He knows'. I must add that now we have been told through our functional literacy programmes that it is much safer to send your money by a money order instead of hard cash in a registered envelope. Before, we didn't know about these things.

We thank God for being given this opportunity to read and write. Our knowledge and horizon have now expanded. We are now motivated to learn so many things about which we didn't know anything. Literacy has broadened my mind. For example, through literacy primers I have now learned the best methods of growing maize on my little plot of land. When I go to an agricultural station and buy orange seedlings, for example, I ask them to tell me the details of how to transplant them on my little shamba. The agricultural officer explains everything to me to my satisfaction. In the old days I felt that such information, instructions and techniques were professed and used by Europeans only. The European was never prepared to educate you - he would only order you about. This is the meaning of liberation. We feel liberated. The rope that had been twisted around you has been untied and so naturally you feel happy.

Relationships with family members, fellow workers, and neighbours

My other colleagues in the factory who have also become literate have now become more helpful and cooperative. When I face any problems, whether at work or at home, they are always willing to help me, for they have been made to understand that Tanzanians

should like each other and cooperate with each other. Such a relationship has been brought about through the light of education.

The relationship between me and my children is very different from the kind of relationship I used to have with my father when I was young. In those days, if I told my father that I wanted to study we would start a quarrel, for he believed that those who got educated merely moved about from one place to another like tourists. He wanted me to build a house and live a settled life. He himself never had the opportunity to learn about better methods of farming. But I tell and encourage my children to be conscientious about learning and I warn them that if they didn't work hard there would be nothing that I would do to help them. I tell them, 'Don't blame me afterwards for your misfortunes and failures in life. Education nowadays is offered to you right at your doorstep and so you should take advantage of it'.

I help my children in their school work. For example, when my 8 years old child returns from school I always ask him questions - 'What did the teacher teach you today? What did you write today? Where did you write? I don't want my children to suffer the way I suffered by missing schooling during my childhood.

Economic well-being

My economic condition has improved. For example, you are made to understand certain ways and means which you can use to improve yourself economically. You are told that in time to come you will become old and you have your children to take care of. Therefore it is important to save some money every month and put it in a savings account in the bank. I have realized the importance of saving not only for the sake of my children but also for solving my own special problems as they arise from time to time. Before, there was no one to tell you 'Brother, there is a today and a to-

morrow. Even if you have only two shillings to save, save it by keeping it in a savings account'.

My wages have increased as well as a result of becoming literate. I can now exercise my own initiative in my job. When I use my literacy skills in doing my job more efficiently and with greater productivity, my efforts become much more visible to my employers and I am rewarded accordingly.

Motivation for literacy

I had missed the opportunity for schooling during my childhood because the nearest school was 43 miles away. When I grew up, I felt very bitter about that. Those were hard times. But now educational facilities have been brought closer to the people - to the village and work-place. Whatever was far has been brought nearer to you. And so I was only too happy to take advantage of this great opportunity for learning right here at my factory.

Views about education and knowledge

Before, the word 'education' used to terrify me. When you hear that someone has an education you were led to believe that it was something very difficult and inaccessible. You begin to wonder where did he go and what did he do to get his education. Previously, it never occurred to me that the so-called educated man must have started from scratch too - that is, by acquiring the basic literacy skills first. Instead, you thought that this man was born with education. It was a baffling phenomenon. Education had the aura of some kind of magic. But now I know that anyone can learn and anyone can get an education. I realize that education is a thing that is taught to you and education is development. An educated man is simply one who is made to understand and to know, and that is how we are involved in our literacy programme. And it is not at all difficult. Education, we thought, was something that

was "there", somewhere far away. We didn't know where that "there" was, but now you are told that it is right there near the river and so you realize that it is quite near.

Practical uses of literacy skills in daily life

Literacy first and foremost enlightens your whole life and all your daily activities whatever they may be. I read all sorts of books and learn many things. And as I have already said before, literacy helps me directly in performing my job more competently and intelligently. I read newspapers, especially "Uhuru". I buy a copy almost everyday unless I am short of cash. And when that happens I borrow a copy of the newspaper from a friend who has bought it. Sometimes I buy books and read them at home and I also borrow some books from my friends. I thank God.

Further and continuing education

Looking back from where I started and where I find myself now, it is a matter of great achievement and I hope to learn a great deal more. A man of my age who has now learnt how to read and write letters needs to be thankful to God. Our teachers are hard working and have liberated us from ignorance. I thank God for that and I also thank the teachers for their whole-hearted efforts in teaching us.

Appendix 2: Chiwanda Participation

STAGE	FACULTY	CLIENTELE
1. PROBLEM IDENTIFICATION	Institute of Adult Education and Health staff highlighting food nutritive values, and body requirements and deficiency consequences.	The main sources of ideas since they know the crux of their problem
2. ARTICULATION OF POSSIBLE SOLUTIONS	Institute of Adult Education, Health, Veterinary Agriculture and Coop. staff providing the people with the technical and financial implications of each solution.	The people considering and suggesting possible ways of solving their identified problems
3. CHOICE OF THE APPROPRIATE SOLUTIONS	The faculty helping the people to understand the implications of their choice - inputs, outputs, purpose goal and evaluation procedure.	The people considering various constraints and choose the most feasible solution (the project)
4. DESIGNING THE PROJECT AND EVALUATION PLAN	The faculty draw project design - networks, critical path, monitoring and evaluation plan.	The people help in listing the activities and their programming depending on their convenience.
5. PROJECT IMPLEMENTATION AND EVALUATION	Faculty participate in project implementation: . provide advice . carry on evaluation	The people implement the project and carry out formative evaluation

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CHAPTER VII

FIRST REPORT ON THE NATIONAL ADULT EDUCATION PROGRAMME: THE SCOPE OF EVALUATION*

A. K. Jalaluddin

Introduction

The National Adult Education Programme (NAEP) of India was launched formally throughout the country on October 2, 1978, the hundred and ninth birth anniversary of Mohandas Karamchand Gandhi in the thirty second year of the country's independence. The objective of the programme is to cover a target population of 100 million adult learners in the age group 15-35 over a period of five years commencing from April, 1979 under a comprehensive programme of adult education for individual and community development. Functional literacy is an important component of the programme.

The current financial year (April 1, 1978 to March 31, 1979) is the preparatory year for planning, formulation of administrative set-up and funding pattern, identification of implementing agencies, resource development, intersectoral coordination both vertical and horizontal, and development of an institutional network for monitoring, evaluation and research.

Finance

Mass drives for universal elementary education up to grade

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* The paper does not necessarily reflect the views of the Government of India.

eight and adult education have been given for the first time highest priority in the education plan by the Government of India. The above two programmes have been grouped under the priority sector of the Sixth Five Year Plan, known as the Revised Minimum Needs Programme (Table 1).[1] A sum of Rs 2000 million, as against Rs 180 million in the Fifth Five Year Plan, has been tentatively earmarked for the NAEP. This amount happens to be 10% of the total allocation for education in the plan (Table II). The total requirement of funds for the programme for the plan-period would be nearly Rs 6860 million.[2] Rs 2000 million earmarked by the Planning Commission is only one source of funds for the programme and funds for it would also become available in other development sectors such as tribal development plans, rural development programmes and programmes of agricultural development.

Administration

Education was a State subject until 1975, when it was made a concurrent subject (to be managed both by the Central and State Governments) by an amendment of the constitution. The original position is proposed to be restored by a separate amendment. For all practical purposes the implementation of all education programmes, including the NAEP, is the prerogative of 22 States and 9 Union Territories. In view of the priority of universal elementary education and adult education, a new funding pattern has been evolved for these two programmes. The plan allocations are proposed to be equally channeled through the Central and State budgets under agreed norms. The centrally administered fund now mainly takes care of the two ongoing adult education programmes, viz., Farmers' Functional Literacy Programme in 140 districts and Non-Formal Education Programme for the age group 15-35 in another 66 districts out of a total number of 397 districts in the country.

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1 Draft Five Year Plan 1978-83, Planning Commission, New Delhi (1978)

2 Summary of the Report of the Working Group on Adult Education for Mid-Term Plan 1978-83, GOI, New Delhi (1978)

TABLE I

TARGETS AND OUTLAY FOR REVISED MINIMUM NEEDS PROGRAMME

Sl. No.	Item	Norms	Coverage 1978-83	Outlay 1978-83
0	1	2	3	4
				(Rs. million)
1.(a)	Elementary Education	100% coverage of children 6 to 14	90%	9000
(b)	Adult Education	Coverage of all adults in age group 15-35	66%	2000
2.	Rural Health	(a) 100% coverage by community health worker (sanitation, immunisation, simple remedies, referal services) (b) Establishment of one primary health centre for every 50,000 population and one sub-centre for 5,000 population.	PHC 46% Sub-Centres 71%	4900
3.	Rural Water Supply	Coverage of all problem villages	100%	6750
4.	Rural Roads	Linking up all villages with a population of 1000 or more	100% coverage of villages with population of 1500 and above and 50% coverage of villages with population of 1000-1500	8000
5.	Rural Electrification	Supply of power to 50% of villages in each State/U.T.	40,000 villages to be electrified.	2500
6.(a)	House-sites for landless and rural housing	100% coverage for landless labour households	About 45%	5000

Sl. No.	Item	Norms	Coverage 1978-83	Outlay 1978-83
0	1	2	3	4
				(Rs. million)
	(b) Environmental improvement of urban slums	Environmental improvement comprehending (a) expansion of water supply (b) sewerage, (c) paving of streets, and (d) provision of community latrines in slum areas. Areas inhabited by scheduled castes, particularly scavengers etc. to be given due priority.	13 million urban slum dwellers in large cities to benefit	1900
7.	Nutrition Programme	1. Mid-day meals for one-fourth of children in age group 6-11 years.	About 4 million addl. children under MIM.	1750
		2. Supplementary feeding programme for under-nourished children in the age group 0-6, pregnant women and nursing mothers in blocks with high concentration of SC/ST	Addl. 2.6 million pre-school children and nursing mothers under SNP	
			Total:	41800

TABLE II

OUTLAY FOR EDUCATION: 1978-83

S.No.	Sub-head	Fifth Plan 1974-79	Anticipated Expenditure 1974-78	Plan 1978-83
1.	2.	3.	4.	5.
		(Rs. million)		(Rs. million)
1.	Elementary Education	4,100 (32)	3,170 (35)	9,000 (46)
2.	Adult Education	180 (1)	90 (1)	2,000 (10)
3.	Secondary Education	2,500 (19)	1,560 (17)	3,000 (15)
4.	University Education	2,920 (23)	2,050 (22)	2,650 (14)
5.	Other Programmes	1,220 (9)	900 (10)	900 (5)
	Sub-total General Education	10,920 (85)	7,770 (85)	17,550 (90)
6.	Art & Culture	370 (3)	280 (3)	500 (3)
7.	Technical Education	1,560 (12)	1,070 (12)	1,500 (7)
	Total Education	12,850 (100)	9,120 (100)	1,950 (100)

NOTE:- Figures in parentheses indicate percentage outlay to the total outlay on Education.

Funds for establishment of the administrative set up for implementation in the States up to the district level, establishment of State Resource Centres, promotion of innovative and experimental projects and projects run by non-governmental agencies identified by the States, the National Service Scheme of university and college students and Nehru Yuvala Kendras of non-student youths, and above all monitoring, evaluation and research are also the concern of the Central Government.

The academic and technical support for all programmes relating to adult education and literacy is provided by the Directorate of Adult Education, New Delhi which maintains liaison with the technical wings of the other Central Ministries and State Governments, State Resource Centres, Universities and Social Science research organizations in the country and abroad.

While the Policy Statement of the NAEP, the Outline of the Programme and the Report of the Working Group on Adult Education broadly reflect the position of the Government of India and the National Board of Adult Education regarding the objectives and agencies for implementation of the programme, the alternative strategies for implementation of the major three aspects of the programme - literacy, functional upgradation and development of social awareness are under constant review.

The Literacy Scene

The Office of the Registrar General, India, arrived at the conclusions on analysis of the literacy data available with them:[1]

i) While literacy has grown during 1961-71, the absolute number of illiterates in the population has continued to rise (Table III).

ii) The rate of increase in literacy during the decade 1961-71 was less than that of the decade 1951-61.

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1 P. Pademanabha, Area Planning with Reference to Educational Needs - IASP Seminar (1978).

TABLE III

CHANGE IN THE EFFECTIVE RATES OF LITERACY AND NUMBER OF ILLITERATES FROM 1961 TO 1971

(Population excluding age group 0-4)

	1961		1971	
	Percentage of literacy	No. of illiterates (in millions)	Percentage of literacy	No. of illiterates (in millions)
All Areas				
Persons	28.30	267.31	34.45	307.19
Male	40.39	115.02	45.95	131.81
Female	15.33	152.29	21.97	175.38
Rural Areas				
Persons	22.46	236.28	27.89	269.39
Male	34.26	102.34	39.55	116.25
Female	10.13	133.94	15.52	153.14
Urban Areas				
Persons	54.43	31.03	60.22	37.79
Male	65.98	12.68	69.83	15.55
Female	40.46	18.35	48.84	22.24

iii) The decade witnessed relatively greater improvement in female literacy.

iv) A very large proportion of literates are literate without educational level. If only those who have completed "primary and above" are considered as literate, the literacy rates are very low.

v) The spread of literacy seems to be faster in those States where it was high in 1961. This seems to be true also when the rates are analysed district-wise.

vi) Despite the special measures, the Scheduled Castes (S.C.) and Scheduled Tribes (S.T.) seem to lag behind the general population. Female literacy, in particular, is very low in these groups.

vii) Most of the districts where illiteracy is high are from contiguous blocks.

viii) When districts are arranged by literacy level, a wide gap is seen between the educationally advanced and backward districts. The inequality in distribution of literates is more pronounced in the case of females.

The Enrolment Scene

While the number of elementary schools and the total enrolment in classes I - V and VI - VIII and the enrolment ratio have been increasing, the annual growth rate has been showing a wide variation yearwise and Statewise.[1] Some of the other findings in this area are:

i) The educationally backward States generally show an adverse enrolment trend. In some of the States the enrolment ratio has been showing a declining trend.

ii) The share of the enrolment of children of S.C. and S.T. is not commensurate with their share in the total population.

iii) There is considerable variation in the availability of educational facilities among the States. The States which are educationally backward also repre-

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[1] Report of the Working Group on Universalization of Elementary Education, GOI, New Delhi (1978) (Table IV).

TABLE VI

EDUCATIONAL DEVELOPMENT 1950-51 - 1973-74

1.	1950-51 2.	1960-61 3.	1970-71 4.	1973-74 5.
A. Institutions (Number)				
i) Primary	209,671	330,399	404,418	429,888
ii) Middle	13,596	49,663	88,567	97,356
iii) High/Higher Secondary	7,288	17,257	35,773	40,127
iv) Colleges				
a) Arts, Science and Commerce	548	1,161	2,587	3,126
b) Professional	147	381	1,017	1,182
v) Universities and deemed Institutions	28	44	93	104
B. Enrolment by Stages (In 000)				
i) Primary	18,678	33,631	59,252	63,193
ii) Middle	3,330	7,480	13,399	14,689
iii) Secondary	1,481	3,463	7,167	7,475
iv) University	174	557	1,954	2,234
C. Government Expenditure (Rs. in million)				
i) Total	710	2,340	8,460	13,110
ii) Plan	200	900	1,150	2,250
iii) Non-Plan	510	1,440	7,310	10,860

sent areas having larger number of villages without any school (Table V).

iv) The districts which show a higher enrolment ratio also generally show a higher literacy rate.

v) The literacy rates are highest in the age group 10-19 years, indicating the impact of elementary education on the rate of literacy.

vi) The population declared literate without level seem to predominantly consist of drop-outs of the primary school system, many of whom relapse into illiteracy.

Retention of Literacy

The tendency to lapse into illiteracy seems to be inversely related to both years spent in school and grade level reached.[1]

An adult made literate through short duration literacy course seems to lapse faster into illiteracy than a school leaver who had completed the primary level of schooling.[2]

No systematic research has yet been done in the country to correlate the problem of retention of literacy of the population of more than 10% who have been declared literate without level with their educational background. It is quite possible that a small investment to improve the quality of teaching of reading and writing in grades I - III might enable a larger portion of primary drop-outs to retain literacy.

Literacy and Development

The literacy rate at the district level and the level of economic development of the district seems to have a positive correlation when the indicators of development are calculated on the basis of the following features: general ecology; agricultural infrastructure; participation rates in traditional sector; potential of

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1 D.R. Gradgil "Report of Investigation into the Problem of Lapse into Illiteracy in the Satara District, Gokhale Institute of Politics and Economics (1955).

2. J.M. Kapoor and Pradipto Roy, Retention of Literacy, Council for Social Development, New Delhi (1970).

TABLE V

RANGE OF THE PROPORTION OF VILLAGES HAVING NO SCHOOL - STATEWISE - FOR SELECTED DISTRICTS

State	No.of districts for which analysis has been undertaken	Range of the proportion of villages having no schools	
1. Andhra Pradesh	14	8.80 (Kurnool)	67.28 (Vishakhapatnam)
2. Bihar	13	31.06 (Darbhanga)	70.46 (Santal-Parganas)
3. Jammu & Kashmir	6	28.09 (Ladakh)	55.43 (Udhampur)
4. Madhya Pradesh	23	38.15 (Datia)	68.85 (Jabalpur)
5. Maharashtra	4	8.98 (Nanded)	15.33 (Aurangabad)
6. Karnataka	4	17.41 (Gulbarga)	31.75 (Bellary)
7. Orissa	7	33.37 (Sundergarh)	69.87 (Baudh-Phendmals)
8. Haryana	2	25.97 (Hissar)	38.48 (Gurgaon)
9. Rajasthan	22	28.64 (Sikar)	66.83 (Jhalwar)
10. Uttar Pradesh	33	26.24 (Hamirpur)	75.97 (Azamgarh)
11. West Bengal	4	31.27 (Purulia)	57.49 (West-Dinajpur)

human resources; distribution, trade and manufacturing infrastructure and organised industry in the modern sector (Table VI).[1]

The State-wise distribution of literacy rates and primary school enrolment rates in India also reveals a definite positive correlation between education and media facilities. The size of educational and professional community in a State or cluster of districts also seem to bear a relationship with the rate of literacy in the area.

Importance of creating a climate

In view of the poor achievement of the adult education programme in the past many people in the country are still not convinced of the rationale for launching the NAEP and are to some extent doubtful about the outcome of the programme. The new conceptual position of the programme as an important intervention for human resource development is yet to be understood and accepted by the major implementing agencies and key functionaries. Here lies the importance of creating an appropriate environment to create a wide-spread awareness and demand for the programme. A routine type of strategy based on undue and exclusive reliance on "bureaucratic" or "voluntary" methods may reduce the programme into a selective one with very limited coverage.

There is now a growing realization among the planners of the programme that the NAEP cannot be implemented as a meaningful mass programme in isolation. It is believed that adult education should permeate all processes and practices in different sectors having a bearing on learning of skills, acquisition of information, and knowledge by and attitudinal and behavioural changes of adult participants. All existing institutional facilities in the sectors of education, economic development, welfare services and communication

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[1] Ashok Mitra as quoted in Basic Economis Statistics, Centre for Economic Intelligence, Bombay (1977).

LITERACY AND INDEX OF DEVELOPMENT

TABLE VI.

S. No.	Name of the State	Average literacy rate (Population excl. 0-4 age group)	Index of level of dev. of districts	Gross enrolment ratio classes I-V	Percentage of scientific & tech. personnel to total working force	No. of newspapers and periodicals per thousand of population	Radio licences per thousand of population	No. of cinema houses per lakh of population
		1971	1961	1975-76	1971	1971	1976	1976-77
1.	Kerala	69.75	3.00	104.5	0.49	131	38	3.5
2.	Tamil Nadu	45.40	3.62	115.9	0.38	125	39	3.2
3.	Maharashtra	45.77	3.08	94.5	0.42	129	42	1.7
4.	Gujarat	41.84	3.24	86.0	0.46	61	49	1.5
5.	Punjab	38.69	3.90	90.9	0.53	48	53*	0.9
6.	West Bengal	38.86	3.00	83.7	0.38	64	29	1.4
7.	Karnataka	36.83	2.89	88.3	0.51	52	51	2.6
	All India	34.45	2.49	83.8	0.33	61	29	1.5
8.	Orissa	30.53	1.46	78.7	0.21	9	8	0.5
9.	Madhya Pradesh	26.37	2.28	67.4	0.23	19	18	0.9
10.	Uttar Pradesh	25.44	2.04	98.0	0.24	31	15	0.7
11.	Bihar	23.35	2.24	62.0	0.18	15	9	0.5
12.	Rajasthan	22.57	2.35	59.4	0.20	29	22	0.7
13.	Assam	33.94	2.60	72.3	0.22	11	8+	1.1
14.	Andhra Pradesh	20.52	2.55	70.4	0.24	26	27	3.1

* Relates to North-Western circle which includes Punjab

\+ Relates to North-Eastern circle which includes Assam

systems are therefore proposed to be utilized under new incentive structures for promotion of the programme through the sectoral activities which were never previously consciously linked with adult education as an instrument for implementation of these programmes themselves.

The present combined annual investment on formal education and welfare services exceed Rs 5,000 million which is 200 times more than the present annual investment on adult education. The success of the NAEP would depend much on how the delivery system of the formal sectors could be tilted in favour of the disadvantaged section of the population by judicious use of the limited funds available with the NAEP functionaries.

The implementation of the NAEP in the above context calls for vigorous homework by the programme designers themselves and identification of situational problems of immediate concern for researchers. The need to evolve internal and external monitoring systems for the purpose is being urgently felt. Due to wide diversity in the literacy scene, educational facilities and tempo of development activities in the different parts of the country there also seems to be an urgency to work on alternative strategies for specific situations. Even within a given area, different approaches might be required to be worked out to tackle the different aspects of the NAEP.

Some of the major areas of immediate concern to the programme leaders are:

(a) identification of the advantages and disadvantages of the programmes implemented under "bureaucratic" and "voluntary" frameworks;

(b) study of alternative framework based on restructuring of individual and institutional incentives for participation in mass programmes;

(c) pilot study to evaluate the possible impact of mass media in creation of demand for literacy;

(d) systematic study of the problem of retention of literacy and the role of cultural and mass media in the promotion of retention of literacy;

(e) pilot study to evaluate the role of the elementary school system in involving the neighbouring community in a continuous process of social education through mass participation of the students in social work.

(f) to evaluate the effectiveness of orientation programmes on the performance development functionaries as adult educators;

(g) identification of appropriate literacy methods for specific groups;

(h) development of bridge materials to promote literacy in the regional language through the local dialects; etc.

CHAPTER VIII

A COMPARISON OF THREE-SCRIPT LITERACY IN LIBERIA

Mohamed Nyei

The Vai people in northwestern Liberia have invented a remarkable phonetic writing system which has remained in active use for about a century and a half in coexistence with two universally powerful scripts - the Arabic and Roman alphabets. These scripts have been widely used within the social context of traditional life of the Vai. This paper is concerned with the question of what people do with these scripts.

The paper focuses on several related questions. First, what are the uses of literacy in a society lacking other components of a complex technology? Secondly, what brings people to undertake the effort of learning how to read and write when literacy provides them no obvious occupation consequences? And finally, what implications does history have for literacy programs?

In addition to trying to investigate the meaning of literacy among the farming and working people, this paper tells a great deal about living conditions of the Vai people and their aspirations as well as about how their writing system has influenced other tribes to create their own forms of writing.

My sources for this paper are limited. But the story I am about to tell was collected from various discussions and conversations with people with whom I was able to talk about the

subject of literacy, during the course of my participation in a literacy research project, co-directed by Drs. Michael Cole and Sylvia Scribner, of the Rockefeller University, under a fellowship from the Ford Foundation since 1976.

The Vai tribe has attained a special place in history as one of the few cultures to have "independently" invented a phonetic writing system, which has been in active use since its invention. It is not known when the script was invented, but it is thought to have been in use even before the official birth of Liberia in 1847. It was the first indigenous writing system in West Africa to be "discovered" by Europeans. Members of the Royal Geographical of England heard of the existence of the script in a lecture in 1849 given by a British Naval Officer, just returned from anti-slavery patrol duty in Cape Mount County, Liberia. 1/

The development of the Vai script provided encouragement for the creation of other forms of writing in West Africa. For example, the Fula and Manding scripts that were invented in Guinea by O. Dembele and S. Konte, respectively.

On his travels to various parts of West Africa, Dembele made collections of many indigenous graphic symbols which allowed him to create his own form of writing. His plan was to invent a script which could be used to transcribe many African languages. His attendance at the 1966 Bamako conference on the Unification of National Alphabets (supported by UNESCO) assisted him in the phonetic perfection of his script.

The Manding script became visible in the 1940s. S. Konte like Dembele, travelled widely in West Africa as a trader. In addition to his desire for an independent form of writing, Konte's invention appears to have been linked with his desire to establish a unified written language for various Mandingo dialects (Dalby, 1968). There

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1/ Hair, 1963, reports an earlier mention of the script in an American Church Missionary publication, 1934, which apparently received little attention.

is no good evidence whether the Manding or Fula scripts had been used by anyone besides the inventors. They were probably short-lived because of their limited uses.

Besides the Vai, three other scripts have also been created in Liberia -- Loma, Kpelle and Bassa scripts -- which use the Roman alphabet. All appear to have been created apparently somewhere after the World War II. Unlike the Fula and Manding scripts, these scripts have been preserved and are taught in the language of their origin.

In order to understand how a three part literacy has flourished among the Vai, some background on the Vai is necessary. The Vai people live in a small coastal area in the northwestern part of Liberia. Their land is bordered by the Atlantic ocean on the west, the Gola tribe to the north and east, and the Dei speaking people on the south. Politically, there are four officially recognized Vai chiefdoms in Liberia-Tombe, Tewor, Ghawula, and Vai Konee.

Most of the people make their living from farming - rice farming and raising domestic animals. Since the sixteenth century, trading also has been important to their economy especially after the rainy season when many farmers turn to the trading of such articles as cotton and silk goods, salt, tobacco, jewelry, and farm produce.

The penetration of two universal religions, Islam and Christianity, into West Africa has played a great part in the Vai beliefs. As early as the first half of the nineteenth century, Muslim scholars came to Vai country to spread the Islamic faith. The impact of this new faith was great; in the towns and villages where Islam was accepted, teaching and book-learning had taken an honorable place in the society. With the establishing of the first "Quaranic school" system in 1905, the religion continued to spread. For example, while the Quaranic teaching was spreading among the

Vai, it was also having an impact in Sierra Leone (a section of Vai country outside of Liberia). Alhaju Tunis, an authorized scholar in Tijaniya faith (advanced Islamic principles) exercised a considerable influence on the population as he spread the faith. In the mid-1930's he crossed the borders into Liberia where he taught the faith of Tijaniya to the Vai. One of his students became Alhji Ibrahim Nyei.

In 1937 word reached Nyei that his teacher and spiritual leader, Tunis, had died on his return to Sierra Leone. At the same time Nyei was told that Tunis had left instructions that he become the leader (muqadam) of the Tijaniya in Liberia. Nyei, too exercised a considerable influence in teaching Islamic laws and principles as well as classical modern Arabic. In 1949, he was awarded an authorized certificate from the Liberian government to open and operate an Arabic School in Grand Cape Mount County. Nyei died recently at the age of 75.

The Vai were not exposed to Christianit until the establishment of the St. John Mission at Robertsport, in 1877 by the Protestant Episcopal Church of the United States. With Christianity came the English language. Before 1877 very few people in the Vai territory spoke or wrote English. Today not only are thousands of Vai men and women fluent in English, but they are also able to write well; for example, most of the business letters, petitions and other diplomatic documents from Vai Chiefs and merchants are written in English.

Judging from the results of both Islamic and Christian teaching, which have only been in operation less than a century, the indications provide us evidence that the people are eager to learn.

Another impact on Vai literacy was the creation of their own form of writing, Vai script, by Dualu Bukele. It is said that Bukele left home at an early age, for the coast where he was

employed by some European merchants. Bukele is thought to have been struck by the use of writing among Europeans and wished that his country men had such a convenient means of communication. He believed that writing should be a national property; every tribe should know how to convey its thoughts in writing. Bukele withdrew from society to work on creating a script for his people. Some accounts maintain that Bukele prayed to God for this knowledge. It is believed that in 1819 (possibly this date was based upon Bukele's return from the coast) he had a dream in which he saw a white man handing him a chart of characters for him and for his people. The next morning, Bukele related this dream to his friends.

Shortly after the invention of the script, a regular school was set up to teach the script in Bandakolo. Young men from adjacent towns came to learn the script. After this school had been in existence for some years, the literature began to circulate in most of the towns near the coast. Another school was built at Mana in the Tombe section.

Apart from Bukele and his associates, who formulated the characters, several others have also contributed to the preservation of the literature. In the 1920's, Momolu Massaquoi, a Vai native serving as a Superintendent at the St. John School, introduced the literature to the students of the school. Although the study of the subject terminated at the end of Massaquoi's services. In 1929, a Vai man, Jangaba Johnson, reintroduced the teaching of the script to the school. In 1962, a record of the 202 characters of the script was preserved at the University of Liberia.

Any visitor to Vai country today can easily see that the script is flourishing and in constant use, primarily for correspondence. Written communication is the primary function of the script for a native who is not literate in Arabic or in English.

A statement made by Gail Stewart (1967) that "literacy in one's own script generates a pride that no phonetic alphabet can give" hits the point that I am trying to make. A point which seems to be born out by the habit of Vai writers of preserving all their correspondence, from massive epistles to the smallest notes.

The next most important use of the script is the keeping of records such as births, deaths, and marriages. The script has also been used to transcribe or translate other languages - Arabic for example. The whole Quran has not, of course, been translated into the Vai language, but Arabic passages are often written out in Vai script characters, a fact utilized by Muslims in their teaching. Perhaps another indication of the script's vitality is the YMCA newspaper published in Robertsport; every issue containing a newsletter written in the Vai script.

To summarize, the Vai script has proved to be valuable and usable. The usage of the scripts as described in this paper certainly developed through the inspiration of the Vai alone. Our effort in trying to specify exactly what it is about reading and writing in a society that has no occupational consequences, the indications which the paper point out lead us away from a vague generalization. We find ourselves seeking more concrete answers about how Vai people acquire literacy, what these literacy activities are, and what they do for them. In a gross way, we can now characterize the major divisions among the script in Vai literacy life as follows: Each of the three scripts we have discussed, English, Arabic and Vai are transmitted differently. English script has little influence except in urban areas. It is learned exclusively in western-type government and mission schools, and is the official script of the political and economic institutions operating on a national scale.

Arabic learning, on the other hand, is an integral part of village life. Almost every town of any size has a Quaranic school conducted by a learned Muslim scholar. The script is used for religious practice and learning.

The Vai script learning, by contrast, is transmitted outside of any institutional setting without the formation of a professional teaching group, and serves personal and public needs in the preservation of village information and in communication between individuals living in different localities.

In support of this conclusion, it seems important to add a statement of Alhaji Kemokai, a Vai native, "In Africa we need Arabic to help us go to heaven and we need English to improve our standard of living, and we need Vai," he might have added (J. Goody, M. Cole, and S. Scribner, 1977), "because it is our mother tongue and we can use it for pragmatic and cultural activities."

Nasal syllables

	ĩ	ã	ũ		ɛ̃	ɔ̃		syllabic nasal
ŋ								
m								
n								
ny								
ɲ								

NOTES

This syllabary is a slightly modified version of the standard syllabery produced in 1962 at a seminar held by the University of Liberia's Program of African Studies in Monrovia. In a few cases I have added a second form of the character which seems to be in frequent enough use to warrant inclusion. I have omitted the standard syllabary's wh series as being too rare. In actual use, of course, formation of the characters varies widely. Some are often inverted, reversed, or turned on their sides, and some (as for instance in the alternates provided) may vary in phonetic value.

THE MODERN VAI SYLLABARY

	i	a	u	e	ɛ	ɔ	o
p							
b							
ɓ							
mɓ							
kp							
ŋgb							
gb							
f							
v							
t							
d							
l							
ɖ							
nɖ							
s							
z							
c							
j							
nj							
y							
k							
ŋg							
g							
h							
w							
-							

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CHAPTER IX

LITERACY RESEARCH: SOME OBSERVATIONS ON ITS NATURE AND CONDUCT

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I THE PURPOSE OF RESEARCH

The participants in the Bellagio IV meeting are, if I am not mistaken, partisans for the cause of literacy. It may, therefore, be appropriate to begin by asking what types of research findings, conclusions or approaches might be effective in (a) increasing support for literacy and (b) improving the planning and management of literacy programmes. It would be such research which we would wish to see undertaken.

In respect to (a), we may assume that a rational society would allocate resources to literacy efforts in relationship to the perceived power of literacy to contribute to the achievement of societal goals. We would, thus, wish to see research undertaken which would demonstrate literacy's values to society. We know, however, that government policy is guided by non-rational as well as rational criteria. As social researchers or users of social research, we are also painfully conscious that research findings are often inconclusive and almost always conditional or contingent. Finally,

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many of the issues involved in the literacy-development nexus are matters of values or preferences which by their nature cannot be proved or disproved. Empirical research alone is, therefore, unlikely to carry the day for literacy.

Nonetheless, there are important researchable issues. This is particularly true if we define research to include philosophic and historic inquiries as well as empirical studies. Findings which demonstrate that literacy can play a significant role in promoting the development of society in desired directions would be persuasive, if not decisive, evidence in favour of enhanced support for literacy. To cite one example, convincing proof that the children of parents who enrol in literacy classes are retained in school longer and have higher achievement levels than children of parents from the same socio-economic milieu who do not enrol in these classes would represent a powerful argument for support of adult literacy as a complement to the sizeable sums invested in the quest for universal primary education. Numerous other examples could also be cited. The point to be made is that the argument for increased support for literacy would be more persuasive if we had additional evidence to prove literacy an efficient means through which to achieve development goals.

(b) Research on the planning and management of literacy programmes encompasses a wide range of inquiries. During the last decade, with the emergence of the concept of functional literacy, the areas or research have been considerably expanded. Traditional literacy programmes were primarily educational and linguistic research. Functional literacy combines a programme of literacy training with a programme of action. The underlying assumption is that motivation for literacy is enhanced when literacy training is combined with programmes of action designed to satisy the pressing

economic, social or cultural needs of participants. In addition to educational and linguistic research, functional literacy programmes call for knowledge on the social, economic and cultural influences and consequences of literacy programmes. Many programmes also include technical information on occupational, health or other concerns. The domain of research has, therefore, become enormously broadened.

It should be also noted that the methods of social research as well as the subject areas of functional literacy have proliferated. The tendency in the last decade has been to adopt naturalistic research approaches to replace or supplement more traditional research techniques. More recently, participatory research techniques have been widely advocated and, to a lesser extent, employed. The methodology of social research is probably more readily transferable than are its conclusions. For this reason it is important to disseminate information on research processes as well as on research results as widely as possible.

How can the disparity between the urgent need for research and the paucity of available resources with which to support research be bridged? The most obvious answer is that all workers and scholars concerned with literacy must make the maximum possible use of research findings in related fields which have direct or potential implications for the planning and conduct of literacy programmes. This desirable outcome, however, will not occur by itself. Some suggestions as to how it may be encouraged are included in the final section of this paper.

Research applied to programme planning and management is usually inspired by the objectives or design of a particular programme or prompted by problems a programme encounters or expects to encounter. Such research, therefore, tends to be programme or country

specific. In one country, linguistic research may be the highest priority. In another, economic factors or public health may be the areas in which information is required. The questions on which research answers may be required are infinite in number. It is thus neither practicable nor possible to provide ready-made answers. The evident solution is to endow countries and/or programmes with the research capacity needed to support their literacy activities.

II. RESEARCH AS A TRAINING PROCESS

In discussing research, our focus is often on its outcome--its conclusions or findings--rather than on the process through which these emerge. One implication of seeing research as a process of disciplined inquiry--and one essential to the planning and management of literacy programmes--is that our attention is called to the actors, i.e., researchers, and not alone to the outcome of their efforts. This should serve to remind us that planning or supporting research in Third World countries, we should rank the training of research staffs as among the essential outcomes to be sought and not as an incidental by-product of our research efforts. In other words, a longer term and higher priority objective should not be the research itself--important though this may be--but the training of individuals or institutional staff in research skills which can be put at the service of literacy programmes in years to come.

The particular arrangements for literacy research very considerably from country to country. In some nations, special institutes have been established to undertake research in support of literacy activities. In other countries, literacy research is a responsibility of centres involved in development research. In many nations, arrangements are decentralized with each programme making provisions for research as it sees fit, or, all too often, having

no means for undertaking research at all. In Third World countries, universities or training colleges are often logical centres for the conduct of literacy research. Because of their training function, if literacy research interests are developed in the faculty and literacy research experiences provided, the research skills which result can be passed on to a generation of students. The purpose of this discussion is not, however, to argue the merits of one type of research organization as opposed to another, but merely to urge that support for research be provided in ways which favour the development of individual skills and institutional capacities to undertake future research.

III. MAKING RESEARCH USEABLE AND USING RESEARCH

The need for more literacy research is everywhere urged. Yet, there is also an awareness that the findings emerging from past research have been poorly exploited. Two examples may serve to demonstrate this. First, while the term 'functional literacy' has been widely adopted, the functional literacy practices which experience and research have shown to be effective have been diffused far more slowly than the programme label. Many 'functional literacy' programmes are essentially traditional in their design and operation. Similarly, an important and well proven development such as the use of radio in support of literacy programmes, although widely used in Latin America where the innovation developed, is much less widely used in Asia and Africa where the need for innovative programmes is greatest. It, therefore, appears justified and necessary to conclude that any plan for research should include, as an essential element, a plan for disseminating the research results and any innovations in research methods which may have been involved.

There are two sides to the problem of dissemination. It is evident that more has to be done by the producers of research, as

well as by "middle men" to present research results in ways understandable to policy-makers and literacy workers and applicable to the respective concerns of these groups. Important findings should also be made available to the general public whose support for literacy work is essential. But challenging as this task of making research useable is, it is considerably simpler than the related and subsequent step of putting research to use. To achieve this, policy-makers and, more particularly, literacy workers will have to be sensitized, oriented and trained to make use of research. This may be best achieved by involving literacy workers directly in research in modest but useful ways. Institutions and institutional expectations also have to change to facilitate the conduct of research and its application.

IV. CONCLUSIONS

In brief, literacy research has to be seen in relationship to a total system of literacy actions. Little can be gained by giving more attention or allocating more resources to literacy research unless related and necessary steps are taken. Research support has to be given in ways such that it not only contributes to the analysis or solution of particular problems but, at the same time, develops research interests and capacities in the organizations aided. The findings of research have to be "interpreted" in ways which render them understandable to non researchers and which relate the interest of the researcher to the concerns of the policy-makers or literacy workers. Finally, a "research consciousness" has to be developed among potential users of research. Only when these conditions are satisfied, will literacy research make its expected contribution to the advancement of literacy.